

CA2ALQG
1945T78
V. 85

File

The Province of Alberta



IN THE MATTER OF "THE NATURAL
GAS UTILITIES ACT"

—and—

IN THE MATTER OF an Enquiry into
Scheme to be adopted for Gathering,
Processing and Transmission of
Natural Gas in Turner Valley

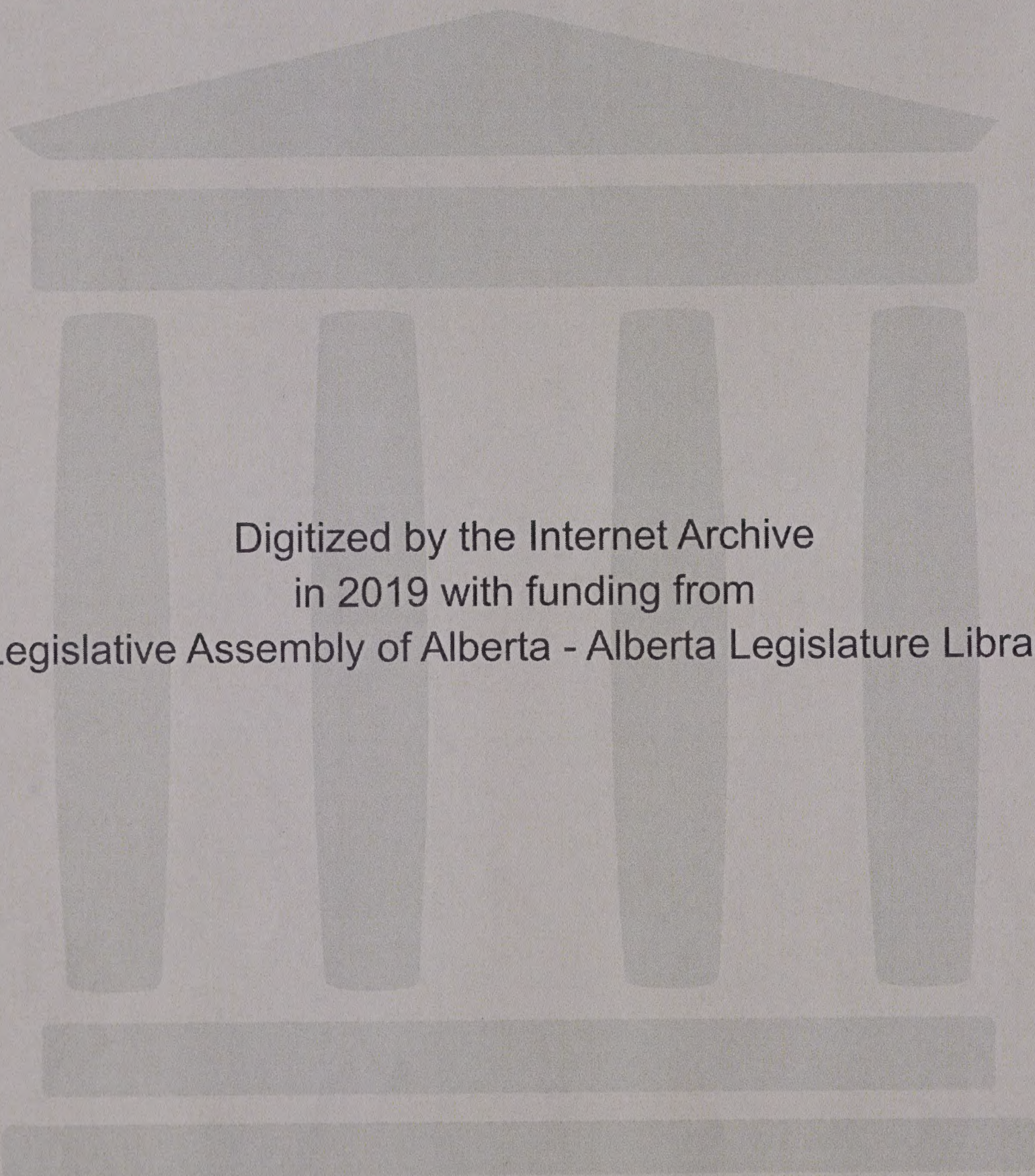
G. M. BLACKSTOCK, Esq., K.C., *Chairman*

Dr. E. H. BOOMER, F.C.I.C., *Commissioner*

Session:

CALGARY, Alberta June 13th, 1946

VOLUME 85



Digitized by the Internet Archive
in 2019 with funding from
Legislative Assembly of Alberta - Alberta Legislature Library

Exhibit 103A

Argument by Mr. Harvie

5215

Volume 85

Thursday

June 13th, 1946

I N D E X

VOLUME 85

June 13th, 1946.

	<u>Page</u>
ARGUMENT BY MR. HARVIE (Continued).....	6836
ARGUMENT BY MR. McDONALD.....	6899

THE CHAIRMAN:

Exhibit 104.

E X H I B I T S

No.

184	Statements filed by British American.....	6836
185	British American Gas Utilities Limited Estimate of Wet Gas Gathered and Disposition of Residue Gas 1945 - 1954.....	6870

Mr. Harvie: I am going to deal with the first statement, and I propose to deal with that

under the appropriate heading later on.

And the second statement, on page 2,

is the capital expenditure and accumulation of estimated

capital expenditure: : : : : of Volume 2, supplemented

1, Exhibit 103A.

And Page 3 is the working capital.

On Page 4 the estimated costs of

operations 1945 to 1954. That is on pages 4, 5 and 6.

And then on Page 7 we have the

allocation of costs, 1945, and 10 years ended 1954.

On Page 8 we have the proposed

allocation of costs of operations for the year 1945 and 10

has been prepared more to use as an illustration of the proposed

to operate, and the same principles can be applied for the

full period.

10. $\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$

H-1-1 10.00 a.m.

Argument by Mr. Harvie.

- 6836 -

VOLUME 85

Thursday,
June 13th, 1946.

MR. HARVIE: As I closed last night, Mr. Chairman, I stated that we were filing some exhibits, and I think that now is the appropriate time to do so. I will now file as Exhibit 184 the statements that are being used and we propose to use in the argument.

THE CHAIRMAN: Exhibit 184.

BRITISH AMERICAN GAS UTILITIES
LIMITED STATEMENT REFERRED TO
IN ARGUMENT NOW MARKED EXHIBIT 184.

MR. HARVIE: This exhibit on page 1 includes the statement of capital expenditures, including the high pressure gas gathering lines, and water system, acquired from British American Oil Company Limited, and I propose to deal with that under the appropriate headings later on.

And the second statement, on page 2, is the capital expenditures and reconciliation to estimated capital expenditures shown on page 1 of Volume 2, supplement 1, Exhibit 102A.

And Page 3 is the working capital.

On Page 4 the estimated costs of operations 1945 to 1954. That is on pages 4, 5 and 6.

And then on Page 7 we have the allocation of costs, 1945, and 10 years ended 1954.

On Page 8 we have the proposed allocation of costs of operations for the year 1945 which has been prepared more to use as an illustration how we propose to operate, and the same principles can be applied for the full period.

Argument by Mr. Harvie.

-6837 -

On Page 10 is the formula for sharing of all markets for gas produced in Turner Valley and scrubbed in Madison's scrubbing plant, which was yesterday marked as Exhibit 183, and which I said I would supply today.

MR. CHAMBERS: Page 10 is really Exhibit 183.

MR. HARVIE: Yes, page 10 is the Exhibit 183 filed yesterday. Then at the back there is a composite graph of the British American Gas Utilities Limited operations in the B.A. area in the Turner Valley field for 1945 and 1946. That is being filed, Mr. Chairman, just more for general information and reference. It shows the total gas gathered for 1945, actual. For 1946 the actual, so far as we have it, and estimated to the end of the year. And then the total gas gathered, the total crude gas gathered, the high pressure crude gas gathered, the low pressure crude gas gathered, and the gas cap gas gathered.

Now, with your permission, I would like to read my noted dealing with that phase, and then possibly we can pick them out in detail from the statements.

The Company submits it is entitled to have included in its rate base the sum of \$149,479.43, as per statement submitted herewith, the 6th of May, 1946, as shown on page 1 of Exhibit 184. That item is made up of the appraised valuation of the high pressure lines, and the water lines, and I will deal with that later.

In respect to the existing high pressure gathering lines and Water System it has been suggested that historical cost or book value might be considered as a basis for arriving at the present useful value of these assets. That suggestion was made by parties other than my client. As pointed out in the Pipeline Case,

Argument by Mr. Harvie.

- 6838 -

supra - p.74, the question of the Companies' investment in the assets has no relation to their present useful value and on the same reasoning the book value could have no application.

It has also been suggested by some other parties, that if replacement cost now be taken, that unit depreciation or book depreciation be deducted instead of observed depreciation. Unit depreciation as to the future would appear to be a reasonable basis for adjusting costs for consumers in the future, but it is submitted this basis should have no application in fixing the present useful value of the Companies' assets previously in existence and presently acquired.

In the Pipeline Case, page 58, the Board says:

"It was agreed by both sides and by all witnesses that in a Utility Company of this type, with a life limited by the life of the field, unit depreciation was fair and reasonable, not only to the company but to the customer. If the recoverable reserves are estimated with reasonable accuracy, each barrel of oil going through the lines will bear its proper share of depreciation with the result that depreciation charges plus salvage recovered at the end of the useful life of the system will enable the company to recover its investment."

The Company subscribes to this view, so far as it is applied only to the future amortization of the rate base, but suggests that it should not be applied in determining the present useful value of existing assets coming under regulation for the first time, for the following reasons:

... the question of the Company's investment
in the assets has no relation to their present value
value and on the same reasoning the book value could have
no application.

It has also been suggested by some

other parties, that if the replacement cost had been taken, that
that depreciation or book depreciation be based on the
of observed depreciation. This depreciation is to the
there would appear to be a reasonable basis for adjusting
costs for depreciation in the future, but it is submitted this
basis would have no application to the present
actual value of the Company's assets previously in
existence and presently depreciated.

In the [Name] Case, page 32, 33

Exhibit B

... was agreed by both sides and by all witnesses
that in a [Name] Company of this type, with a
life limited by the life of the [Name], and depreciation
was [Name] and [Name], not only to the company but
to the [Name]. It is [Name] that the [Name] [Name] are
estimated with [Name] depreciation, and [Name] of
all [Name] [Name] the [Name] will [Name] the [Name] [Name]
of depreciation with the [Name] [Name] depreciation [Name]
plan [Name] recovered at the end of the useful life
of the system will enable the company to recover its

investment.

The Company subscribes to this view.
no [Name] is [Name] only to the [Name] [Name] of the
note [Name], but suggests that it would not be applied in
[Name] the present [Name] [Name] of [Name] assets [Name]
[Name] [Name] for the [Name] time, the [Name] [Name]

Argument by Mr. Harvie.

- 6839 -

- (a) The Company submits that for the purpose of accounting and finality that, with the Company's consent,

and I make that point as it might be that under the Act there might be some question as to what power you had to treat this as an absolute sale. I agree that the mere fact that we suggest transferring the assets to a subsidiary company is not a factor in the point I am making now, and that is done more for convenience for the future than anything else, but I do suggest that with the Company's consent,

the Board should treat the acquisition of these assets by British American Utilities as a purchase, and that the prices be fixed as above indicated in order that final entries may be put through the books of each Company and this phase of the matter closed.

- (b) If the foregoing suggestion were not accepted and the assets were valued by depreciation on the past throughput basis of unit depreciation, it would mean that under the Board's reasoning in the Pipeline Case, it would be necessary to leave this item in a state of flux to be adjusted up or down, depending on whether or not the Board's present estimate as to total throughput was high or low, otherwise British American might either gain or lose unreasonably on the transaction. This has been demonstrated very clearly by what was said by the Board in the Valley Pipeline Rate Case in dealing with the question of the fixing of a Service Rate.

And we quote:

Argument by Mr. Harvie.

- 6840 -

"Service Rate":

The service rate is determined by ascertaining the revenue required by the company to meet operating costs, depreciation, income tax and to yield the allowed rate of return on its rate base. This revenue related to the throughput of the line gives the charge per barrel to be allowed. When the Commissioners fixed a rate of $9\frac{1}{2}$ cents per barrel they did so on the assumption that the annual throughput would be 6,000,000 barrels. The rapid development of the field and the advent of the war completely upset that estimate. In 1940, the throughput was 7,914,680 barrels and 1942 was considered to be the peak year with a throughput of 9,449,928 barrels. Unless an extension of the field is established or unless an immediately adjacent new field is discovered, it is reasonable to suppose that the throughput will decline gradually each year.

The business done by a gas, water, electric or telephone company can be estimated within reasonable limits and for a number of years in advance. The variations in expected revenues will not be marked although there will be fluctuations. If the Board attempted to fix a rate now which would be applicable for the next three, four or five years, it might turn out to be quite unfair both to the company and to its customers."

And I will refer to this quotation later.

Now dealing with New Installations.

The Company submits that it should be entitled to its cost of construction of \$774,018.62, as shown on Page 1 of Exhibit 184. This figure is arrived at from that statement by deducting the valuation of \$149,479.43 of existing

Argument by Mr. Harvie.

- 6841 -

equipment from the total expenditure of \$923,498.05.

In asking for this figure to be included in the rate base, we have not overlooked the comment by Counsel in respect to the original estimates made by the officials of the Company as to the cost of the construction which are dealt with in detail by Mr. Donellan in his evidence. Volume 42, page 3259 plus.

The Company appreciates that there was a large under-estimation of the cost of construction, and regrets that this has been the case, but we would point out that there is no justification for including any adjustment in the Rate Base for any error in the estimates of the cost of construction.

We submit that the sole and only questions to be considered in this connection are:-

1. Was the construction made in accordance with Orders of the Board?
2. Were the costs properly and legitimately incurred in such construction, having regard to conditions at the time of construction?

There is no evidence or suggestion that such was not the case, except for some small items aggregating approximately \$10,000.00, which were classified by Mr. Donellan as "engineering hazards" and fully, and we believe satisfactorily, explained by him. Volume 42, p. 3261, Exhibit 133.

Then Working Capital. The Company submits that it should have included in its rate base the sum of \$28,700.00 for working capital, computed as per statement submitted herewith. Exhibit 184, page 3.

Argument by Mr. Harvie.

- 6842 -

The sum total of these three items make the Total Rate Base, and may be summarized:

1.	Existing equipment	\$149,479.43
2.	New " "	<u>774,018.62</u>
	for a total of	923,498.05

which is the figure to be amortized, and

3.	Working Capital	<u>28,700.00</u>
----	-----------------	------------------

Making in all \$952,198.05

on which the Company is entitled to its Rate of Return.

Possible Additions

It should be pointed out that there are two additional items, namely:

- (1) 1945 and 1946 Operating Deficit.
- (2) Costs of Hearing.

that the Board may decide to include either in whole or in part in the Rate Base.

We will later deal with our recommendations respecting these items under the heading "Operating Costs."

Now, if you would just care to refer to Page 1 of Exhibit 184, there is a breakdown of how the total of \$923,498.05 has been arrived at. That is the amount we suggest should be included in the Rate Base exclusive of working capital. I have no particular comment, I do not think, to make on that, Mr. Chairman, except to refer to page 2, where there is a reconciliation of that figure with the figures of our other exhibits. On working capital there is a considerable increase of \$8700.00 shown on this statement

H-1-8

Argument by Mr. Harvie.

- 6843 -

as over the previous statement filed. That is really no different, as I will explain later. It is a transfer from the equipment account to the working capital account, in connection with stores after completion of the building. So that the increase in the working capital is decreased in proportion in exactly the same amount in the other item.

(Go to page 6844)

Argument by Mr. Harvie.

- 6844 -

RATE OF RETURN

The Act requires the Board to fix a fair and reasonable rate of return. Such rate must be fair to the consumers on the one hand, and, on the other hand, secure to the Company concerned a fair rate on the capital invested or Rate Base.

To quote Mr. Justice Lamont in the Northwestern Utilities Limited, vs City of Edmonton, he states

THE CHAIRMAN: Have you the reference to that?

MR. HARVIE: All my references appear in the margin and will appear in the record.

THE CHAIRMAN: Very good.

MR. HARVIE: That is Supreme Court of Canada, 1929, C.S.R. 192-3 (See Exhibit 106).

"By a fair rate is meant that the Company will be allowed as large a return on the capital invested in its enterprise (which will be net to the Company) as it would receive if it were investing the same amount in other securities possessing an attractiveness, stability and certainty equal to that of the Company's enterprise."

We submit that the rate fixed by the Board should be not too liberal so as to inflict hardship on the public which has to pay the same, nor on the other hand, must the rate be too low so as to be unfair to the Company concerned. Too low a Rate of Return, besides being unfair to the Company which has financed the operations of a public utility enterprise, would have a detrimental effect in future cases of a similar nature.

IN THE VALLEY PIPE LINE DECISION at p.85, the Board has this to say as to the propriety of a $9\frac{1}{2}\%$ rate:

Argument by Mr. Harvie.

- 6845 -

"The rate of $9\frac{1}{2}$ cents per barrel, recommended by the Commissioners, approved by Order-in-Council and fixed by Board Order, is related to and indeed is predicated upon the volume of business done, the operating expenses, the depreciation rate and finally upon $9\frac{1}{2}$ per cent per annum return on capital, and indeed the rate per barrel is expressly related in the Commissioners' report to all of these factors. $9\frac{1}{2}$ per cent per annum free of income tax is an exceedingly generous rate of return. That generous rate is fixed because the company's investment must necessarily be for a relatively short term and the failure of the field or rapid decline of the field might create a situation wherein the company might find itself left with a useless plant for which only salvage value could be recovered. It is for these reasons that a generous rate was allowed."

We submit the above comment is particularly applicable to our situation in the South End of the field.

There are two yardsticks available, we submit, that might assist the Board in the determination of what is a fair and reasonable Rate of Return: Namely:

- (1) What is the comparative current rate in effect in other public utilities, involving comparable risks and hazards?
- (2) What is the earning capacity of money in general and in particular of the Company concerned?

Two public utility enterprises within the Province of Alberta are the Gas Company and the Valley Pipe Line. The Rate of Return allowed to the Calgary Gas

Exhibit 113
Page B

Company is $8\frac{1}{2}\%$ per annum and to the Valley Pipe Line 8% per annum. In comparison of the periods concerned and hazards of the enterprises, it is submitted that the production of natural gas in the South end of Turner Valley, with a contemplated useful life of only 10 years, is of a more hazardous nature than either of the two public utilities referred to, and that an increase to $9\frac{1}{2}\%$ net represents a suitable measurement of this increased hazard.

I would like also to point out that there is another hazard in the B.A. area, where it is proposed to take gas down to atmospheric pressure, which leaves no cushion in this respect as there is in the other areas where it is proposed to take it down to a minimum of 50 pounds and in some cases to only 375 pounds. In other words, we have no back-log at all beyond our estimates and I think that is a factor that maybe is worthy of real weight in considering the matter of Rate of Return. It has been pointed out, other areas do not contemplate taking gas down to that low pressure, with the result that they have that additional reserve as a back-log in the case of anything going wrong.

With regard to the earning capacity of money in general, reference is made to Exhibit 106, page 4, where Mr. Baker, the expert witness of the Madison Company refers to representative Canadian industry obtaining 9.04% return; this return being based on capital employed. This would indicate

Argument by Mr. Harvie.

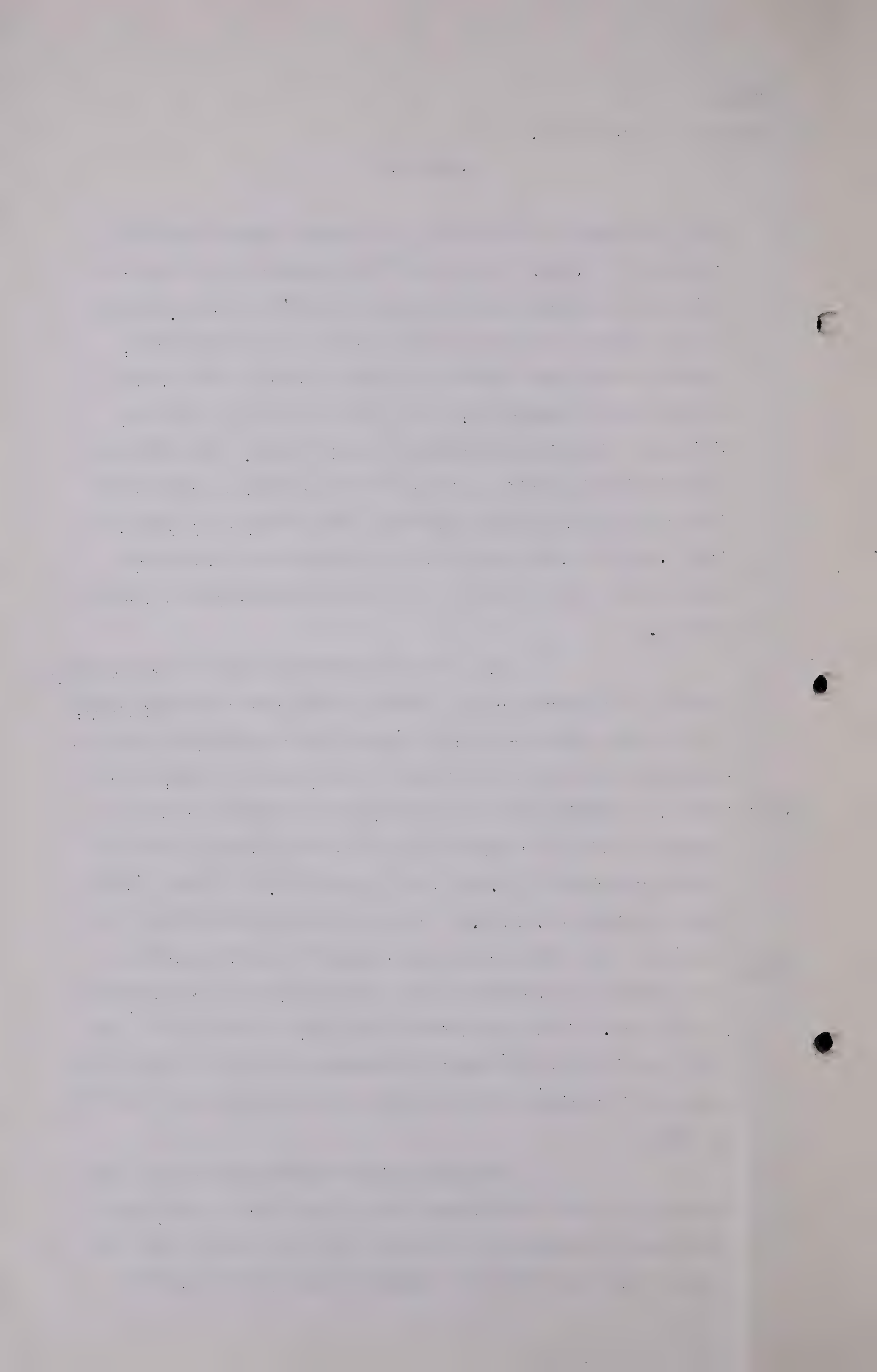
- 6847 -

that industry in general has an over-all average earning capacity of 9.04%. The fact of the operations in question being conducted as a public utility may give some security to the company concerned, but it does, at the same time, remove or at least restrict freedom of action with regard to policies of operation, and puts a ceiling on earnings without giving firm assurance against losses. In addition this utility is dealing with a wasting asset, an important factor when considering security. Therefore, an increase from 9.04% to 9.5% appears to be a modest and reasonable addition to the net rate of return as compensation for these factors.

Ex.119 Insofar as the British American Oil Company Limited is concerned - as differentiated from its subsidiary, the Utility Company - which company has financed the whole of the expenditure and operations of the system to date, it is shown on Exhibit 119 that the capital employed in its own general activities carried on with free enterprise, had an earning capacity of 12.16% per annum over the 7 year period ending December 31, 1944. It was suggested by Counsel for the Board that this percentage was not a fair comparison for purposes of determining the Rate of Return to be settled by the Board. This contention was made in view of the fact that the British American Oil Company had done a considerable amount of financing by debentures at a rate varying from $2\frac{1}{2}\%$ to $3\frac{1}{4}\%$.

Page
3145

We suggest the reputation and financial standing of The British American Oil Company is such that funds can be borrowed at that low rate of interest and the Company can, and should be allowed to use such funds to



Argument by Mr. Harvie.

- 6848 -

increase its earnings on its "employed capital". This is good reason why such borrowed funds should not be diverted to an enterprise which pays less than the earning capacity of the company on its own capital employed. The quid pro quo for accepting such a lower rate of return on the capital invested in the Utility Company should be the removal of possible hazards in the utility Company. At no time during the immediately preceding 7 years has the rate of return actually realized in the total operations of The British American Oil Company, been less than 10.49% per annum on the capital employed.

Then to deal with the criticism of Mr. Blanchard that that figure did not include borrowed money, we would suggest for the guidance of the Board, it will be seen in the same Exhibit 119, that after adding all funds from debentures to the employed capital of the Company, the over-all average rate of return during the 7 years ending 1944, was 9.65%, which you will note, Mr. Chairman, is .15% more than we are asking. A projection of the same computation for the preceding 3 years shows that for the 10 year period, that is going back 10 years from 1935 to 1945, prior to the inception of the Utilities operation (that is the same period backward that the Utilities is contemplated to operate in the future), they realized a net return of 10.45% per annum on the Company's capital employed plus all funds from debentures. It will be noted that is approximately 1% more than $9\frac{1}{2}$.

It is suggested, therefore, that the rate of return, $9\frac{1}{2}$ % net of tax, as claimed in my client's submission is well within the boundaries of the two yardsticks suggested, and that the rate of return to be

Argument by Mr. Harvie.

- 6849 -

allowed by the Board should be at not less than the rate claimed, namely $9\frac{1}{2}\%$ net of income tax on its entire Rate Base.

Now I would like to make some remarks in regard to the:

RELATIONSHIP BETWEEN "RATE BASE" and "RATE OF RETURN"

It was suggested by Mr. Hamilton in his Exhibit 125 that "the "Rate Base" and "Rate of Return" cannot be wholly disassociated." We do not agree with this contention, but rather submit that the "Rate Base" should be considered and determined on its own merits and entirely independently, having regard to the general principles applicable thereto. It should not be a matter of compromise or "saw-off" to give effect to extraneous matters.

We further submit that the "Rate of Return" should be dealt with in a similar manner to the "Rate Base", that is, dealt with on its own merits and entirely independently of extraneous matters.

We also suggest that possibly the well-head price should be dealt with in a similar manner.

We favor the setting of a static Rate Base on the general principle of appraised value and observed depreciation as previously discussed. And we make this suggestion for consideration to meet a case where possibly the traffic will not stand that application.

THE CHAIRMAN: A static rate base for what length of time, Mr. Harvie, right to the end of the life of your undertaking?

MR. HARVIE: Static subject to the amortization fund being made applicable each year.

Argument by Mr. Harvie.

- 6850 -

THE CHAIRMAN: In other words, your rate base would vary from year to year by the amount of the capital additions, less the amount amortized.

MR. HARVIE: Exactly. I mean static in the sense that once it is set

THE CHAIRMAN: I understand.

MR. HARVIE: I think maybe right there, Mr. Chairman, that a great many factors that I have not touched on here should well be considered in that connection. If that were not the case is it not possible that under our Companies Act generally we would get into real difficulty on occasion? If for instance the Board of Directors of a Company made an investment in a utility Company we will say, a fully owned subsidiary on the basis of that valuation that was originally established and they carried it into the parent company's books at the figures that actually they had paid and they take, we will say, the full income over a few years that was allowed in the other company and then a few years later - and I should also suggest that in the parent company dividends were paid of all surpluses that could be applied towards the payment of dividends and just kept its capital intact - and going along for a few years on that

(Go to page 6851)

ARGUMENT by Mr. Harvie.

- 6851 -

basis, suddenly the rate base is cut, it would possibly mean that they would also have to cut the value at which they were carrying the assets in the parent company and I do not just know what might be the repercussions of that. It would have had the effect of paying monthly dividends out of capital, certainly if it was anti-dated.

THE CHAIRMAN: That cut of the rate base might come about because of a change in price levels, is that what you had in mind ?

MR. HARVIE: No, I say this, - it might be that or for any other reason. That would maybe be the most normal one to expect that would be applied, would be a change in price levels.

THE CHAIRMAN: My present view is that a separate rate base is not the proper thing, that is my present view, Mr. Harvie.

MR. HARVIE: And we will not agree with your present view then because this is our submission that it should be that.

THE CHAIRMAN: Possibly the way to deal with a situation of that kind might be in the rate of return.

MR. HARVIE: I am going to deal with that in that way.

Now just on that point we suggest that if the Board at any time should be called upon to deal with a situation where the total operating expenses and the Rate Base and Rate of Return set on these principles could not be met from income available, then, we suggest that a fair way to deal with such a situation would be :-

Argument by Mr. Harvie.

- 6852 -

Firstly : - To see if there were any outside sources to which the deficit could be properly charged and collected.

Secondly:- Determine and set a proper static Rate Base and a Rate of Return independently of the income factor, and then:

Thirdly :- Make any adjustment that may be necessary to meet the particular situation over any interim or permanent period through a reduction in the Rate of Return. This should be done on the grounds of expediency and on that ground only, for such period as it may be necessary. The Board should clearly state what it considers to be the proper Rate Base and Rate of Return and the reasons for reducing the Rate of Return to meet the particular situation.

We submit the above approach to such a situation has the following advantages :

1. It does not disturb the application of proper principles which can be used as precedents in the future.

And Mr. Chairman, I cannot just over-emphasize the advantage that that would be if we could get well established principles in effect that would guide us in future operations.

2. It gives the Utility Company that is being penalized on account of an uncontrollable situation the opportunity to benefit to the full extent under the operation of The Income Tax Act without placing any burden on the other parties.

I do not know that I need to emphasize that

Argument by Mr. Harvie.

- 6853 -

statement. You all know the effect of it.

Now as to "Cost of Operations"

Exhibits 113A and B were submitted by our Company in the opening stages of the Hearing, covering the best estimate then available of cost of operating the complete system. Page 1 of this Exhibit summarizes the estimated expenses for each of the 10 years and the total for the 10 year period. With no precedent to guide us and little or no instruction or rulings issued by the Board covering various phases of operations, this schedule of estimated expenses was necessarily a preliminary one. They were prepared so as to show the total amount of funds required to finance each year's operations, based on the submissions regarding cost of plant and return on investment. It was decided to use, for the purposes of the statement, amortization based on a straight-line method, and as you will remember, over a ten year period. Mr. Donellan gave evidence however that, subject to amortization of the plant in the 10 year period, the unit throughput method of amortization was another suitable method of providing for amortization. He did, however, stress that the unit to be used should be the number of units estimated for the 10 year period, which, in our opinion, was the economic life of the enterprise on the basis of present operations.

Exhibit 113A and B, for convenience, summarized the cost of operations into the following categories:

- (1) Operating costs by which was meant direct operating charges such as labor, material, supplies, etc.
- (2) Administration
- (3) Amortization of capital expenditures.
- (4) Return on investment.

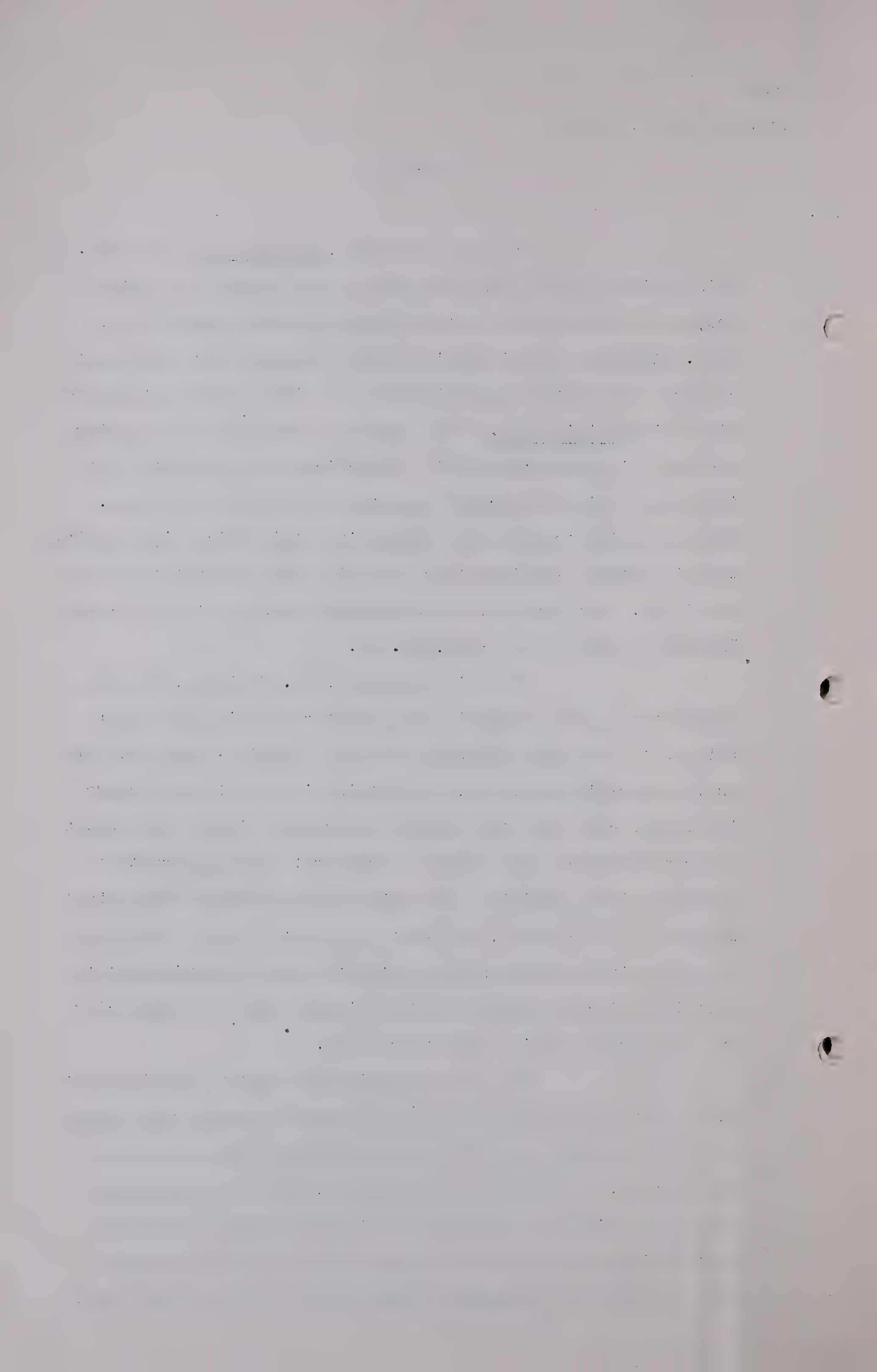
Argument by Mr. Harvie.

- 6854 -

On the 18th March, Exhibit 164 was filed. This Exhibit showed from the books of the Company the actual results of operations for the 12 months ending December 31, 1945. Attached to this Exhibit was a supplementary statement comparing the actual operating results with the estimates submitted in Exhibit 113B. Here again the fact that the Hearing was still in progress made it impracticable to allocate to the individual units the actual operating results for the year, and I am going to give one example in detail which will possibly well illustrate the importance of doing more at that time than we did do. For example, the statement shows an item of expense "Rental of Input Wells - \$2,549.19".

You will remember, Mr. Chairman, when you were more or less proceeding on a matter of trial and error both as to the input wells and how they should be handled both as to ownership and so on, and I think in one of your Orders it was directed that the allowables from the input wells would be transferred to other wells or rather to the Conservation Board and in the original direction we got from the Board that was one of the factors, and that we were to pay the owners of the wells in the meantime the estimated amounts equivalent to what their incomes would have been if they had been producing on a comparable basis with other wells.

Now the situation was that we carried that out as far as we could but for one reason or another the allowable of that input well, or in fact any well, has never been transferred. It is still receiving it, with the result that the Company just had to give effect to your Order and charge that additional money as an expense, and it was anticipated that that would be reimbursed when we got the money back from



Argument by Mr. Harvie.

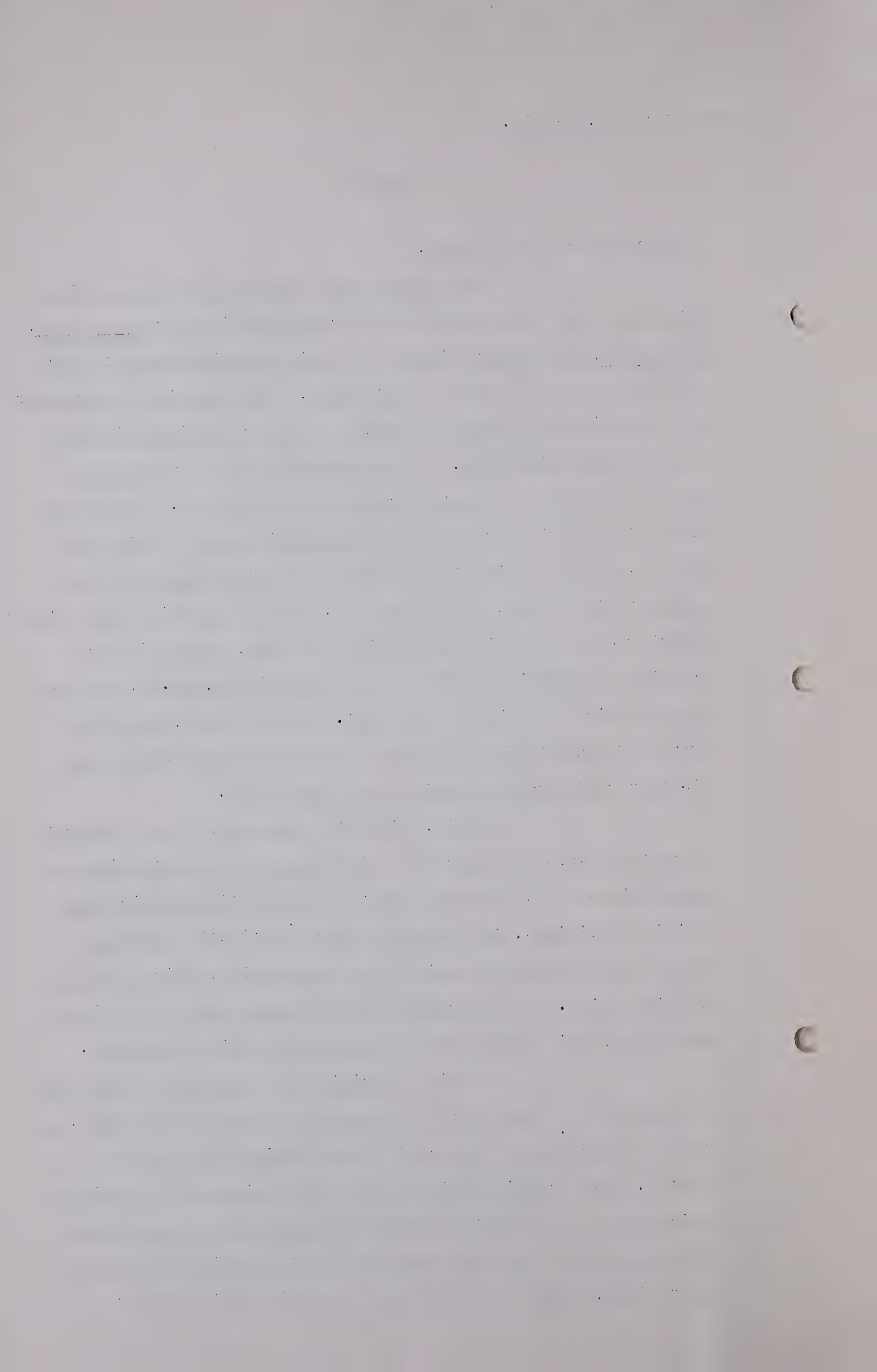
- 6855 -

the transfer of the wells.

This amount was charged against operations since the only instructions were contained in Board Orders 12, 20 and 22, which established the basis of reimbursement which was due to the owners of input wells. The question of transfer of the allowable for input wells was under consideration but had not been finalized. Therefore there was no alternative but to consider the matter pro tem as an expense. As and when authorization is given by the Conservation Board to transfer the allowables of input wells then the reimbursement of this payment will follow the allowables. If the Board's order transferring allowables is retroactive for 1945, there will be a credit to Operations to the extent of this \$2,549.19, the same amount which we paid out for rent. In any event, when the Order of transferring allowables is issued there will be no further rental charge against the Operations.

Again, since the Board has not as yet confirmed the value at which the high pressure gas gathering and water lines are to be taken over by The British American Gas Utilities Limited, the provision for amortization of these items was made on the basis of our submission, which again is straight line. As was covered in my remarks dealing with the rate base, this amount has now been substantially reduced.

No final decision had been made at the time of closing the books for the year ending December 31, 1945, as to the allocation of the cost of the various parts of the system. Full consideration has now been given to the evidence which has been presented before the Board and we have, therefore, prepared a revised statement of the estimated costs of operations, giving effect to the following adjustments:



Argument by Mr. Harvie.

- 6856 -

- (a) Adjustment of Rate Base to the suggested amount to be accepted as proper value for the high pressure gas gathering and water lines.
- (b) Elimination of input well rental from the statement.
- (c) Applying the principles of amortization on a unit basis, using as the unit for each particular operation the throughput of that operation as will be covered in my remarks on allocation of costs.

MR. McDONALD: Would you mind repeating that, Mr. Harvie.

MR. HARVIE:

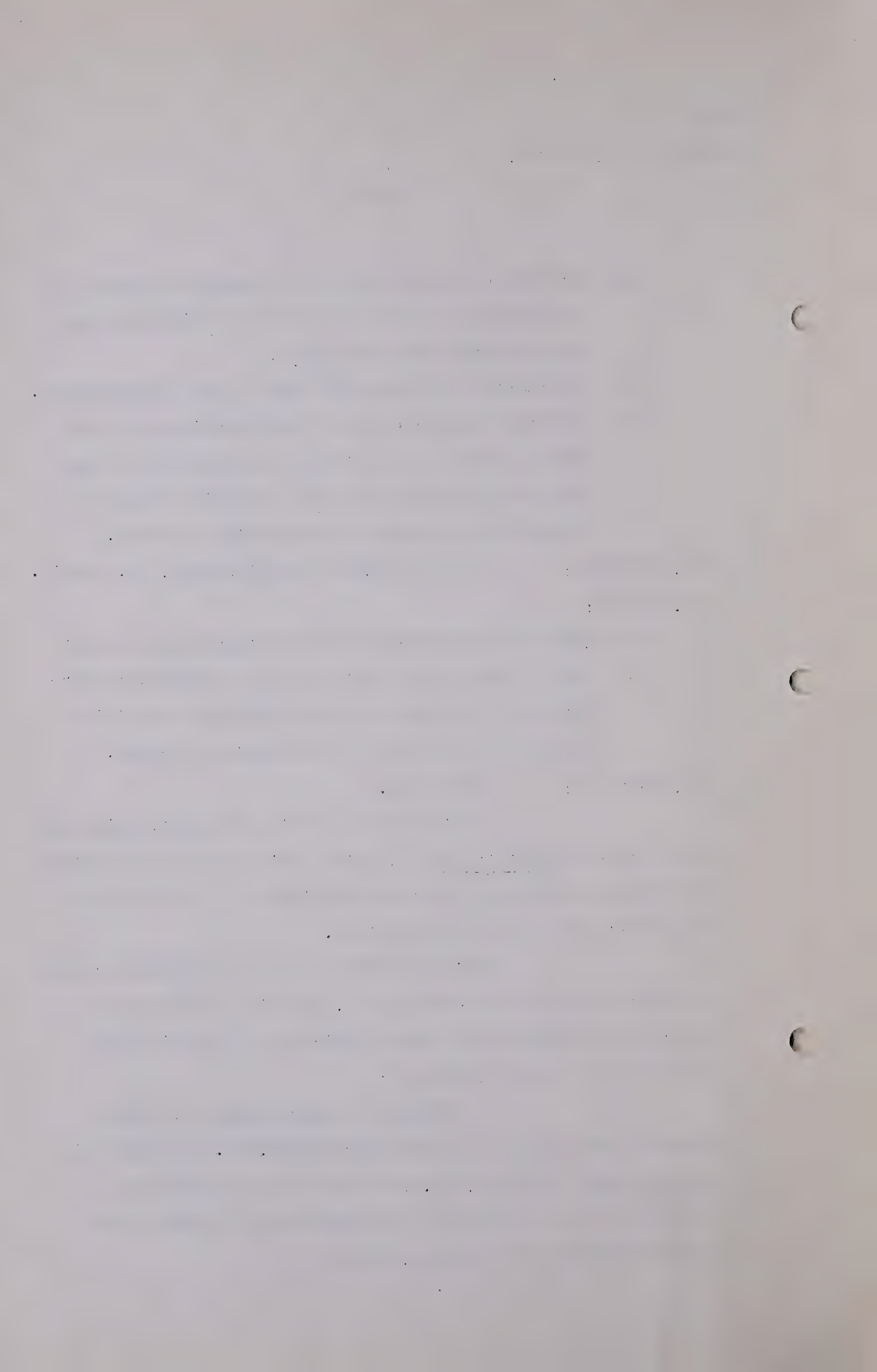
- (c) Applying the principles of amortization on a unit basis, using as the unit for each particular operation the throughput of that operation as will be covered in my remarks on allocation of costs.

MR. McDONALD: Thank you.

It is felt that this statement, which has been filed as Exhibit 184 and which I will refer to in detail in a moment, will be of material assistance to the Board in considering the cost of operations.

This statement shows our estimated cost of operations for the 10 year period, and gives effect to the various adjustments and charges which have been discussed during this argument, namely :

The amount of amortization of capital expenditures has been adjusted from \$972,832.00 as shown in Exhibit 113A, to \$895,621.99 to which must be added the following items which have been distributed as part of the service department expenses, namely :



Argument by Mr. Harvie.

- 6857 -

Fuel Gas Scrubber	-	\$17,204.99
25% of Water System	-	5,784.15
Trucks and Automobiles	-	4,110.05
Office Equipment	-	776.87

These amounts account for the adjusted Rate Base total of \$923,498.05; exclusive of working capital, which is the same figure as we dealt with under the "Rate Base".

In the original statements, as previously discussed, amortization was based on a straight line basis. Now that reserves and market sharing position have been agreed upon, the amortization has been calculated on a throughput basis for each individual unit or phase of the operation.

(Go to Page 6858)

Now on the Return on Investment - $9\frac{1}{2}\%$

Schedule 113A shows the total amount during the 10 year period for return on investment, based at $9\frac{1}{2}\%$ net of income tax of \$801,658.00. The revised statements now submitted show the amount involved in this item as \$677,571.25. The causes of this change are :

- (1) Working capital was originally estimated at \$20,000.00, being the value of stores on hand and 1/6th of the cash requirements to carry on operations. When construction was completed, certain items previously carried in new equipment account are now spare parts in Stores and carried in working capital account. So, 'Working Capital' on which a return on investment is required now stands at \$28,700.00 as against \$20,000.00 in the original submission, with a corresponding reduction in the Rate Base. Exhibit 184, p. 3.
- (2) Effect of Throughput Basis for Depreciation -
As previously discussed the original estimate was based on a straight line method of depreciation. We are now making our estimates on a basis of 'units of throughput' depreciation. As return on investment is only payable in respect of the un-amortized amount of the rate base, there have been changes in the annual amounts required for return on investment. These two factors explain the differences.

Operating Costs - Exhibit 113A was based on the original estimate of Operating Cost of \$66,521.00 per annum. Using 1945 actual operations as a basis the direct operating costs are approximately \$70,000.00 per annum, an increase of about \$3,500.00.

Argument by Mr. Harvie.

- 6859 -

Administration - The charge for Administration remains in accordance with the original estimate, namely \$15,000.00 per annum. See Exhibits 113A, 113B, 113C.

The net result is that the total cost of operations for the 10 year period, after giving effect to all charges, is reduced from \$2,589,700.00 to \$2,466,833.13, a difference of \$122,866.87, exclusive of the items covering the "cost of Hearing" and 1945-46 Operating Losses.

Cost of Hearing.

We have not estimated the amount. The expenses will consist of :

- (1) Salaries of staff engaged.
- (2) Witnesses and their fees.
- (3) Expenses of the staff in connection with the Hearing.
- (4) Legal fees.

It is suggested by the Company that the cost of the Hearing, after determination of the above factors, should be considered as a deferred charge against operations for the succeeding 5 years. If the total expenses involved should amount to \$30,000.00, this will mean an annual levy against Operations for the years 1946-50 inclusive of \$6,000.00 per annum.

OPERATING LOSSES for the years 1945 & 1946

The final amount involved cannot be determined until the Board has issued its Order in connection therewith. On the assumption that the costs of operation as now filed, are acceptable to the Board, it would be found that the present interim payment being received, falls short of meeting the necessary financial requirements for 1945 by \$97,239.88, plus any additional loss incurred in 1946 operation up to the date of the Board Order.

Argument by Mr. Harvie.

- 6860 -

This total is the accrued shortage which we estimate at \$153,963.41 as of the 31st July, 1946, will have to be provided for by adding it to the rate base, unless otherwise directed by the Board.

I hope we are not endeavouring to hurry you by putting in that date 31st July 1946.

THE CHAIRMAN: All I can say is that you are optimistic.

ALLOCATION OF OPERATING COSTS

We have found that to determine a fair and equitable method of allocating the cost of the various branches of the Utilities operations presents one of the biggest problems we have encountered in the preparation of our final submission for this Hearing. The principle of seeing that the cost is borne by the parties who benefit, to the extent of such benefit, is, we believe, accepted by all parties. The difficulty, however, is to determine the degree of benefit and how to measure the costs for distribution between the various parties. This will possibly be one of the most contentious matters before you. After giving due consideration to all evidence which has been presented, the British American Gas Utilities Ltd. arrived at the opinion that the "Demand and Volumetric" formula developed by Mr. H. Zinder (expert witness called by the Producers, and which formula, for simplicity, we will refer to as the "Zinder formula") gives the fairest and most equitable method of distribution.

In that connection, Mr. Chairman, I would like just shortly to summarize who Mr. Zinder is and his qualifications. He does it himself in Volume 54, page 4295, Volume 51, pages 3940-4, Volume 51, page 3993. There are several pages of that and I would like to have that in the record. There are only two references that I want to mention

Argument by Mr. Harvie.

- 6861 -

right now and it might be with consent we might copy into the record that, rather than take time to read it at the moment.

Mr. Zinder is a professional Engineer with some years of experience in numerous phases of business such as we are now dealing with, and he states:

VOLUME 51

9.30 A.M. Session,
November 12th, 1945

- 3940 -

THE CHAIRMAN: All right, Mr. McDonald.

MR. McDONALD: I am ready to call Mr. Zinder.

HANINA ZINDER, having been duly sworn, examined by Mr. McDonald, testified as follows:

Q Mr. Zinder, would you outline for the information of the Board your educational qualifications, and your contact with the Public Utility business ?

A All right. I have a Degree of Bachelor of Science in Electrical Engineering from the Carnegie Institute of Technology. I received a Degree of Master of Business Administration from Northwestern University, where I specialized in the field of Public Utilities. I received a Certificate of Completion from the Central Station Institute in Chicago, which was operated by the Commonwealth Edison Company of Chicago, Illinois, and I partially completed work towards a Ph. D. Degree at the University of Wisconsin.

As to my experience, briefly it has been as follows:

For approximately six years, 1924 to 1930, I was employed by the Commonwealth Edison Company of Chicago.

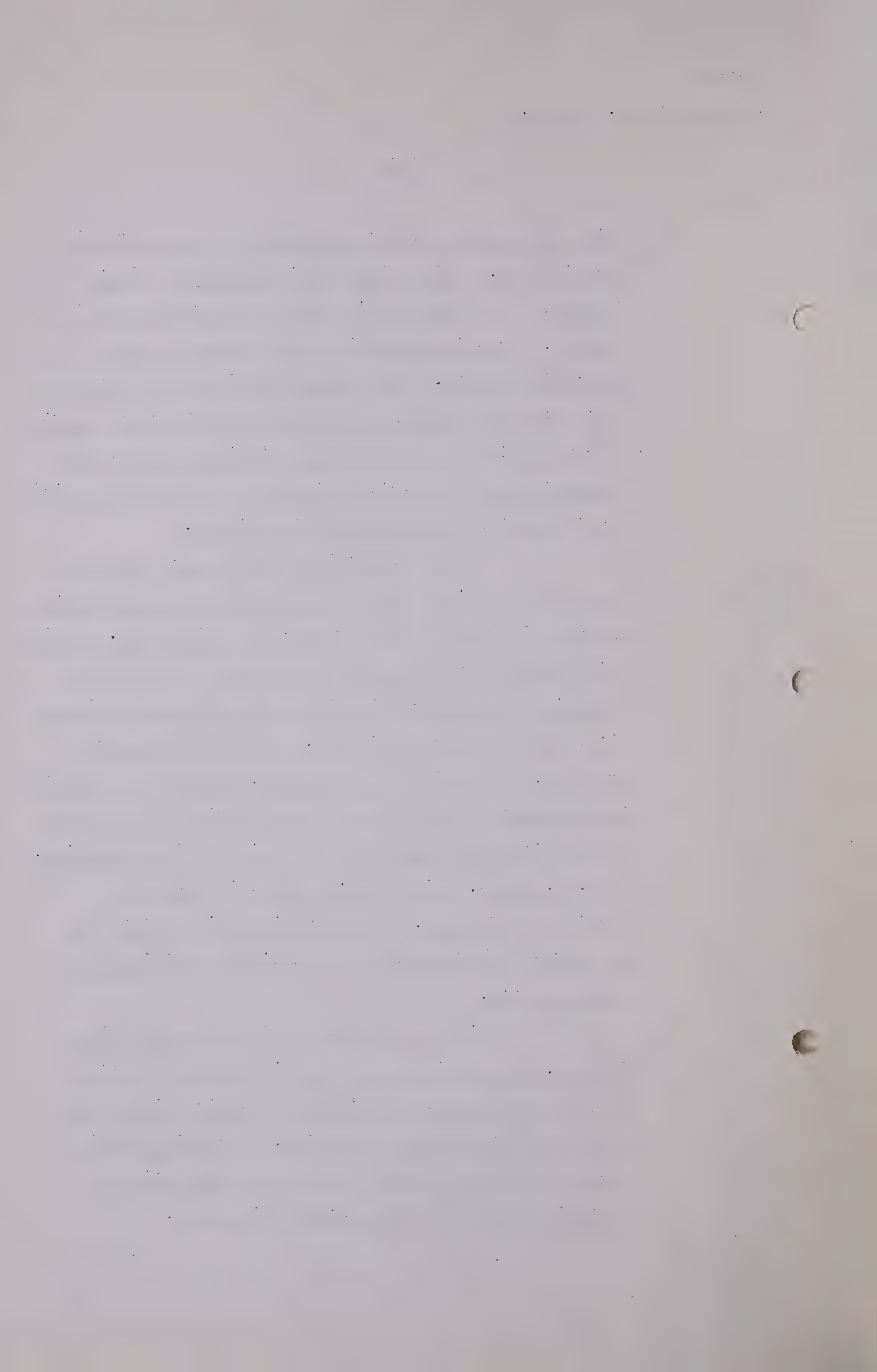
Argument by Mr. Harvie.

- 6862 -

This employment followed my graduation from Carnegie Tech in 1924. While with the Commonwealth Edison Company, I was employed in various departments of the Company, including operating experience in their generating plants. The largest portion of my employment with this Company was spent in making cost reports on comparative costs of Central Station service, and generation of electricity privately by large commercial and industrial establishments in Chicago.

I took a short leave of absence from the Commonwealth Edison Company to complete my work towards my Master's Degree from Northwestern University. During this period I was engaged by the Institute for Land Economics and Public Utilities at Northwestern University, as a Research Assistant. Among the research projects, upon which I was engaged, was that of gathering together a large part of the material for the book on Materials for the Study of Public Utility Economics, by H. B. Dorau, which was published in 1930 by MacMillan & Company. I also assisted in a study on the effect of Commission regulation on Utilities in Massachusetts.

While working at the Commonwealth Edison Company, and obtaining my Master's Degree at Northwestern University, I lectured on Public Utility subjects at Northwestern University. I continued this lecture work for several years after completing my Master's Degree at Northwestern University.



Argument by Mr. Harvie.

- 6863 -

I lectured in the courses of Public Utility Rates and Public Utility Operation and Management.

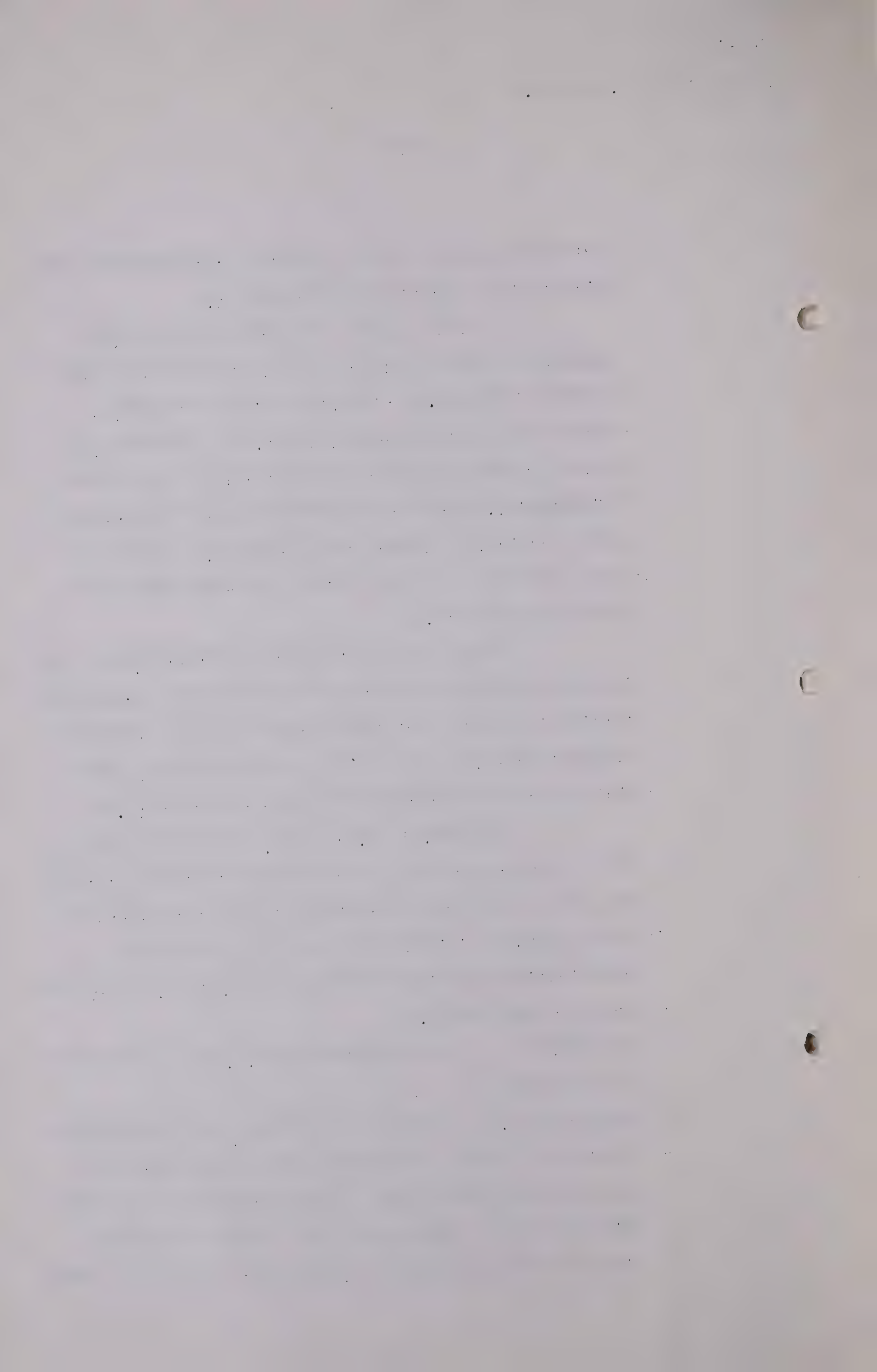
In 1931 I left the Commonwealth Edison Company to join the staff of the Public Service Commission of Wisconsin. While with this Commission, I had the title of Chief Rate Analyst. I handled all manner of rate problems and testified thereon before the Commission, including problems of determination of cost of service, making cost allocations, design of rates for both the usual retail and large wholesale users of electricity.

While with the Wisconsin Commission, I was called upon as a Consultant to assist in the design and determination of the original rates for the Tennessee Valley Authority, and for the establishment of rate policies for the Electric Home and Farm Authority.

In August, 1935, I was granted a year's leave of absence from the Wisconsin Commission to join the staff of the Rural Electrification Administration in Washington. I joined the staff of the Rural Electrification Administration in August, 1935, shortly after it was organized.

Q MR. HARVIE: Is that Washington, D.C. or the State of Washington ?

A Washington, D.C. During this period I was essentially responsible for the recommendation of rate policies and their implementation. I became Chief of the Rate Division of this Administration, in which capacity I continued until December, 1937, when I joined the staff



Argument by Mr. Harvie.

- 6864 -

of the Federal Power Commission.

I joined the staff of the Federal Power Commission with the title of Principal Engineer, in December 1937, and in February, 1938, was made Acting Chief of their Division of Rates and Statistics. Shortly thereafter I became Chief of this Division, which position I occupied continuously for almost seven years until January 1st, 1945. In this position I had responsible charge for the direction and supervision of the Commission's activities involving engineering and rates for both electric and natural gas companies. This included a review of all gas and electric rate contracts filed with the Commission, and the making of recommendations thereon to the Commission. It included the supervision of all engineering and rate phases involved in all formal gas and electric investigations of the Commission, and the recommendation of the principles and policies to be followed by the staff in such work. This included the principles followed in practically all of the cost allocations presented by the staff of the Commission in natural gas rate cases, as well as the determination of service lives principles in respect to depreciation, rates, and related engineering and rate matters.

Commencing in June, 1938, with the passage of The Natural Gas Act, well over 50% and perhaps as much as 70% of my time was spent on natural gas matters. Prior to this time the Federal Power Commission had no jurisdiction over natural gas companies. It became necessary with the passage of The Natural Gas Act, for

• • • • •

• • • • •

• • • • •

• • • • •

• • • • •

• • • • •

• • • • •

• • • • •

• • • • •

• • • • •

• • • • •

• • • • •

• • • • •

• • • • •

• • • • •

• • • • •

• • • • •

• • • • •

• • • • •

• • • • •

• • • • •

• • • • •

• • • • •

• • • • •

• • • • •

• • • • •

• • • • •

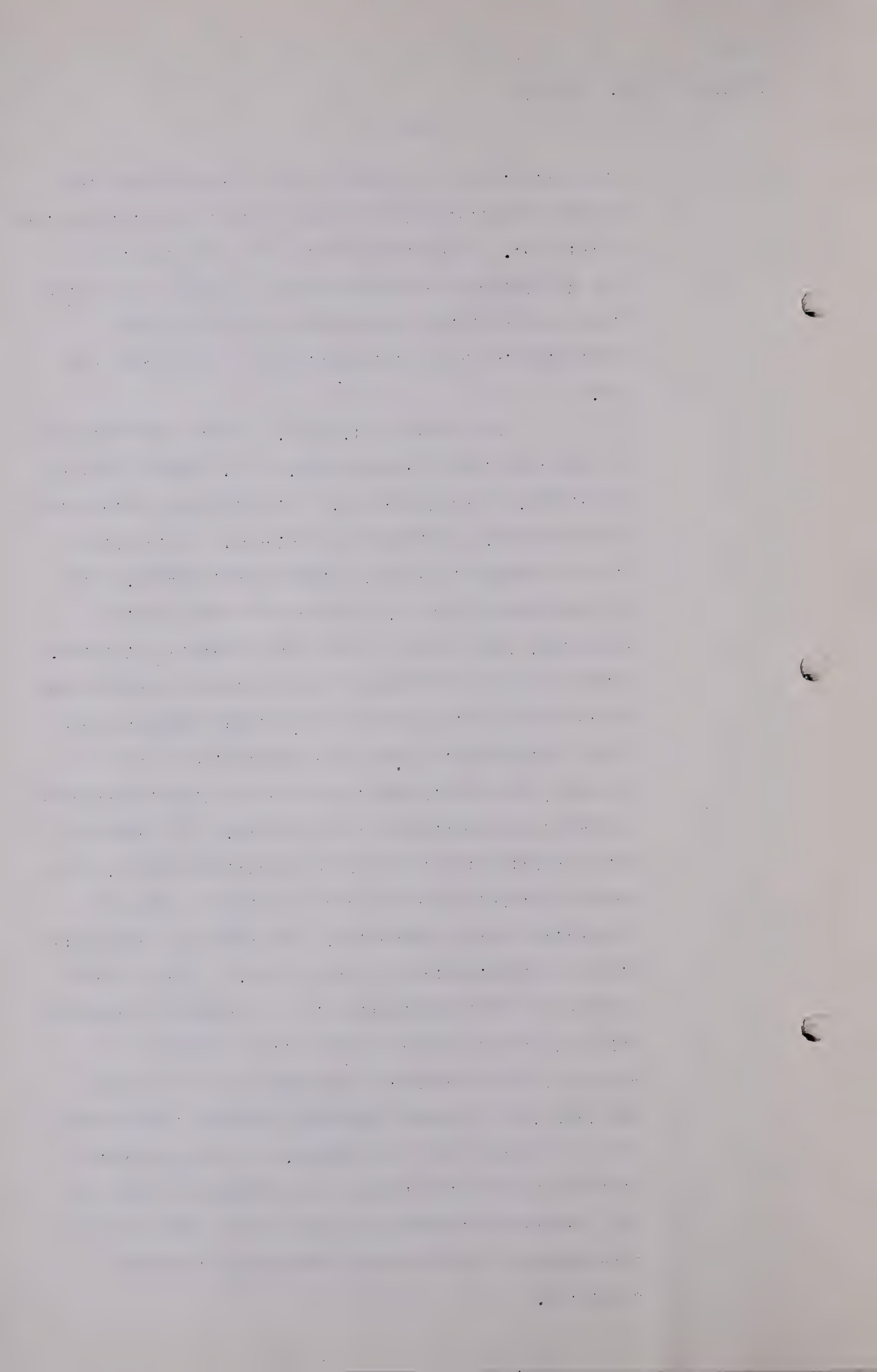
• • • • •

Argument by Mr. Harvie.

- 6865 -

the Commission to institute from the beginning principles and policies to be followed in its administration of this Act. I participated in the determination of and the making of recommendations of many of the principles and policies subsequently adopted by the Commission in the administration of The Natural Gas Act.

On January 1st, 1945, I left the Commission to join the firm of consultants, of E. Holley Poe and Associates, as an Associate. This firm has offices in New York City, Washington and Chicago. It is principally engaged in consultation on engineering, rate and management matters, dealing with gas and oil companies, and to some extent with electric utilities. This firm has been engaged by a Committee representing the natural gas industry of the United States to prepare the industry's case for presentation to the Federal Power Commission in connection with its present general investigation of the industry. The scope of this investigation includes conservation matters, the uses of natural gas and broad questions as to the regulation of the production, gathering and transportation and distribution of natural gas. The announced purpose of the investigation is to formulate recommendations to the Congress of the United States with respect to any necessary amendments to The Natural Gas Act, and to gather together essential information on the industry for the Congress. My own responsibilities in the firm include supervision of most of the technical evidence to be gathered, prepared and introduced on behalf of the natural gas industry Committee.



Argument by Mr. Harvie.

- 6866 -

I would like to mention also that we are consultants to public as well as private agencies. I have been engaged by both the Bonneville Power Administration and the South Carolina Public Service Authority, to assist them on their rate problems.

VOLUME 51

H. Zinder,
Dir. Exam. by Mr. McDonald.

(Page 3993)

However the major division of costs, where the major costs will be found will be in the two categories, demand and volumetric. Demand costs in total are just allocated in proportion to the responsibility of each of the uses at the time of peak load and the equipment. In the case of allocating compression costs, repressuring, as I view it, indicates that the full capacity of the equipment at the time of peak loads is required for the market. And in such conditions, then, none of the fixed charges would be allocated to repressuring. Volumetric costs could be allocated between these various services to the market and repressuring on a straight per MCF basis. I might add that this basis of costs allocation is that which was used by the Commission staff under my direction almost without any exception. There were some refinements made with respect to allocating the returns under the Federal Income Tax as between the demand and volumetric but the general principle of dividing the costs into the two main categories and allocating the demand cost in proportion to the peak load on the equipment is what I have referred to. "

Argument by Mr. Harvie.

- 6867 -

As was pointed out by Mr. Zinder the formula outlined by him is the one adopted in the United States for all rulings given under authority of the Federal Power Commission. With this background of authority and being satisfied that conditions in Turner Valley loan themselves to the application of the Zinder formula, we recommend its acceptance to the Board.

Exhibit 140, that is the last Exhibit put in on behalf of the producers which is the submission covering allocation of repressuring costs. As will be seen by reference to Exhibit 140 the principle outlined is to divide all operating costs into two categories, namely :

1. Demand load.
2. Volumetric load

Those expenses which are incidental to the maximum load which the equipment will be called upon to meet represent the 'Demand' factor, and include :

1. Amortization of Rate Base.
2. Return on investment.

All costs so classified should be levied against the parties which require the peak load service in the proportion they require the peak load capacity.

During 'offpeak' periods the equipment is in position to supply additional services on a basis of 'off-peak' loads as compared to the 'demand' load requirements. Under this formula the so-called 'offpeak' load is not charged any part of the 'demand' charges but bears its full share of 'volumetric' charges on straight 'Volumetric' basis.

Consideration has been given to each of the five stages of operations being performed by British American

Argument by Mr. Harvie.

- 6868 -

Gas Utilities. These are :

1. Wet Gas Gathering, including both High and Low pressure lines and the Low Compressor Station.

Originally in our statement, you will remember, Mr. Chairman, we suggested that the absorption plant should not bear any load of repressuring cost. In our revised submission we are including our share on the basis of this formula of those costs. By doing so and being the only customer who might say get off the line at that stage, and that all that use it to that stage use it jointly, there is no need now for that division into the low compressor station. The low pressure/^{gathering} lines and the high pressure gathering lines, they have all been as I say revised and consolidated.

2. High Pressure Compressor Station
3. High Pressure Transmission line to Madison Scrubber.
4. Repressuring Lines

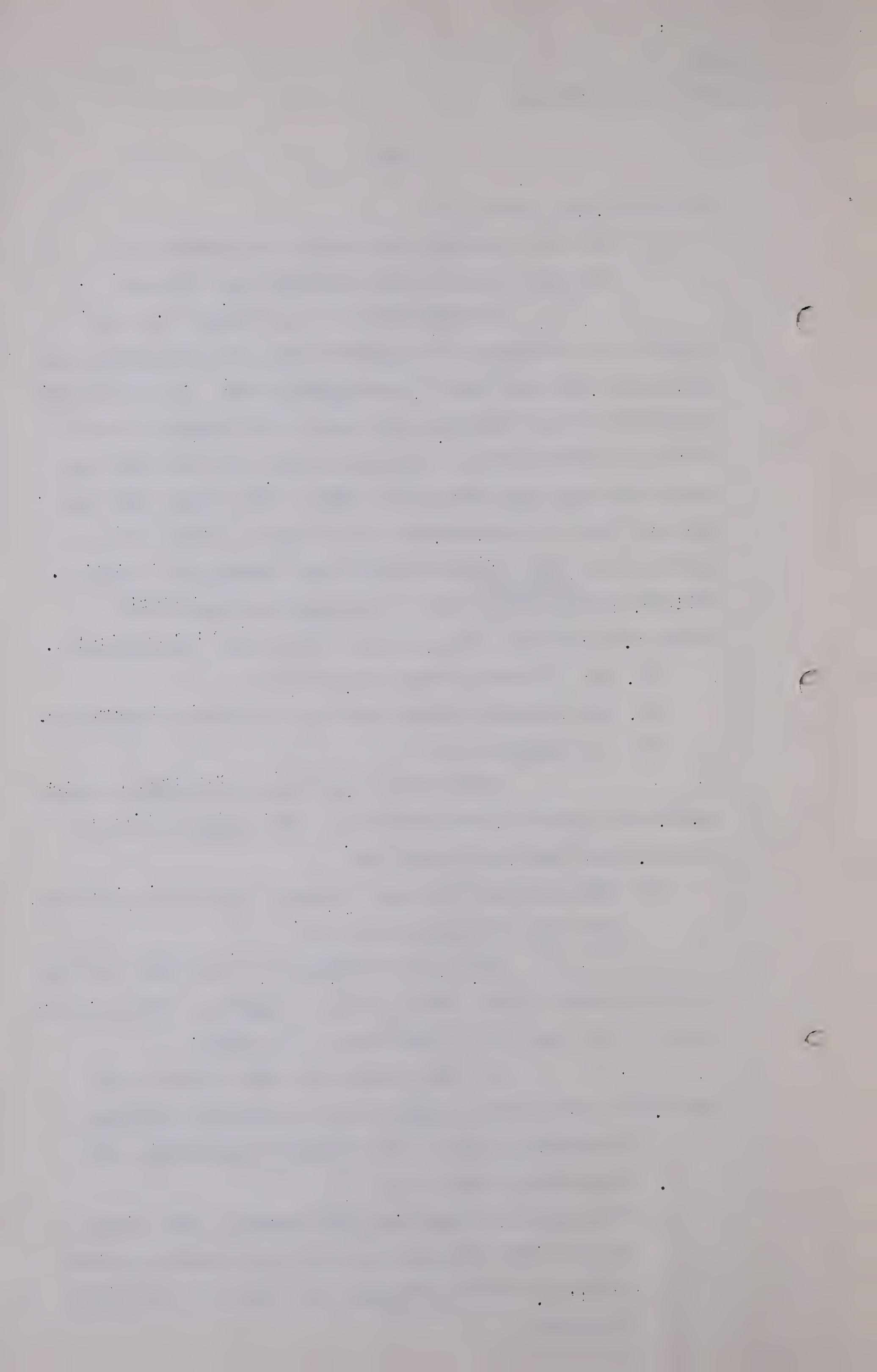
Those are the ones that run from the high compressor station to the input wells and through which the B. A. Gas cap area is repressured.

6. Water System (75% only) of which only 75% is included, 25% being allocated otherwise.

We strongly recommend to the Board that the formula outlined by Mr. Zinder should be applied without reservation to each and every stage in the operations.

For this purpose we have prepared and included in Exhibit 184, pages 7 and 8 statements showing:

1. The distribution of 1945 estimated operating costs using this formula and,
2. The results of applying this formula to the total of the 10 years' operations so that the Board can have before it for consideration the effect of such distribution.



Argument by Mr. Harvie.

-6869 -

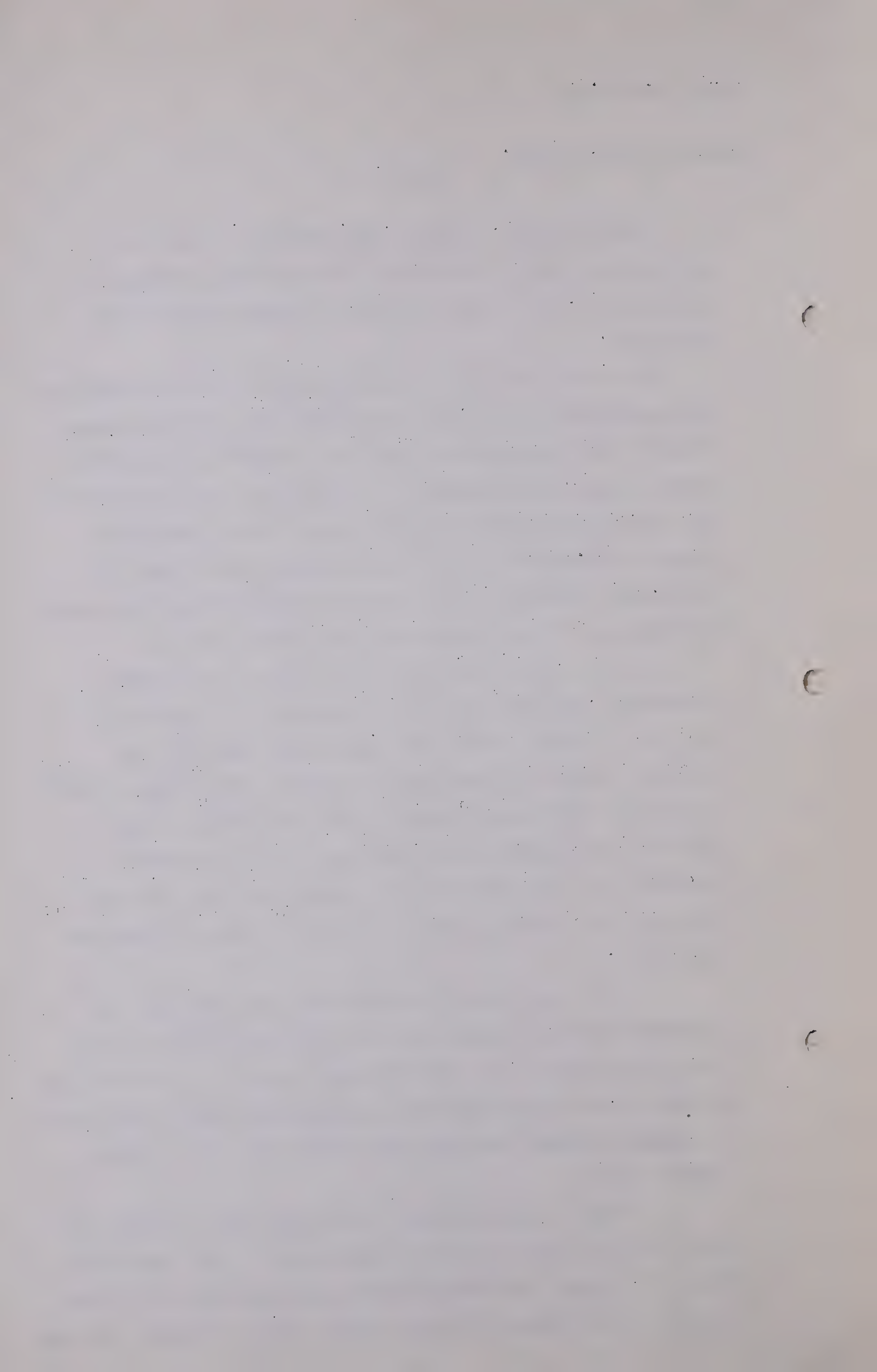
I think again, if I may, Mr. Chairman, I will read my notes on that. I do want to deal with that statement in some detail, and I think it would be better after reading my notes.

It is suggested that the allocation of wet gas gathering and compression costs, that in dealing with the five phases the Utilities Company operations we propose in our present amended submission to allocate a portion of all gathering and low pressure compressor station charges to the absorption plant. Mr. Donellan in his early evidence stated that the absorption plant should not be called upon to carry any charge of operations of the low pressure compressor station.

However, having considered and weighed the evidence submitted, and having decided to recommend the adoption of the Zinder formula throughout, the British American Gas Utilities Company has amended the previous allocation of cost by applying the Zinder formula to the total cost of gas gathering and compression, including in this the cost of operating the high pressure gas gathering lines, the low pressure gas gathering lines and the low pressure compressor station.

The throughput of the wet gas gathering and low pressure compression operations have been based on the total wet gas gathered. The 15% estimated in volume of the wet gas gathered, which is consumed by the Absorption Plant operations, is assessed against the Absorption Plant under the heading "Demand load".

That may be explained by the fact that no matter how much gas that goes to market or downstream the absorption plant, it always does require 15%. The balance of 85% of the demand load is assessed against market, since the market at peak



Argument by Mr. Harvie.

- 6870 -

load requires the full balance of the capacity of the equipment. Therefore the Demand Load is divided in the proportions of:

Absorption Plant	-	15%
Market	-	85%

In allocating the volumetric portion of the expenses again 15% of these charges is levied directly against the Absorption Plant to cover gas consumed by it. As the entire remaining 85% is used twice -

Firstly in the Absorption Plant operations, and then as residue for Market on the basis of market, 66% and Repressuring 34%, the Volumetric charge under the formula is distributed:

Absorption Plant		50% of the full charge
Market	66% of 50% =	33% " " "
Repressuring	<u>34%</u> of <u>50%</u> =	<u>17%</u> " " "
	100% 100%	100%

which, summarized, the absorption plant pays half and the market and the repressuring between them pay the other half in proportion of 17% to 33%.

There is a statement here that might well have been filed with the others, Mr. Chairman, but it wasn't, and now we would like to submit it as Exhibit 185.

THE CHAIRMAN: Exhibit 185.

BRITISH AMERICAN GAS UTILITIES LIMITED
ESTIMATE OF WET GAS GATHERED AND DISPOS-
ITION OF RESIDUE GAS, 1945 to 1954,
NOW MARKED AS EXHIBIT 185.

MR. HARVIE: That exhibit, I might say, has just been compiled and is an estimate of wet gas gathered and the

Argument by Mr. CHarvie.

- 6871 -

disposition of the residue gas through the period 1945 to 1954, expressed in billion cubic feet. It has been compiled by our engineering staff recently, as recently as June 7th, having taken advantage of present knowledge rather than guessing at it when we made our first submission.

It will be seen from the statement, Exhibit 185, that, in the ten-year period, it is expected that there will be produced 38.5 billion cubic feet of dry or residue gas.

MR. CHAMBERS: Does that mean going to market, Mr. Harvie?

MR. HARVIE: The next item will cover that, Mr. Chambers.

Of this amount 25.8 billion cubic feet is expected to go to market and 12.6 billion cubic feet will be repressured. During the hearing, Counsel for the City advanced the theory that, as all gas was processed through the Absorption Plant, it should carry the full cost of delivering gas up to the Absorption Plant.

Counsel for the Gas Company suggested that as both the Absorption Plant and Market used the same gas, in effect, twice, that the costs should be divided as follows:-

$\frac{100}{185}$	to Absorption Plant
$\frac{85}{185}$	to Market

It will be noted that, subject to the refinement of charging against "Repressuring" its share of the "Market Gas", the formula gives full effect to this latter suggestion in respect to the volumetric feature.

Argument by Mr. Harvie.

-6872 -

Then on the

HIGH PRESSURE COMPRESSOR STATION, which is the next unit,-

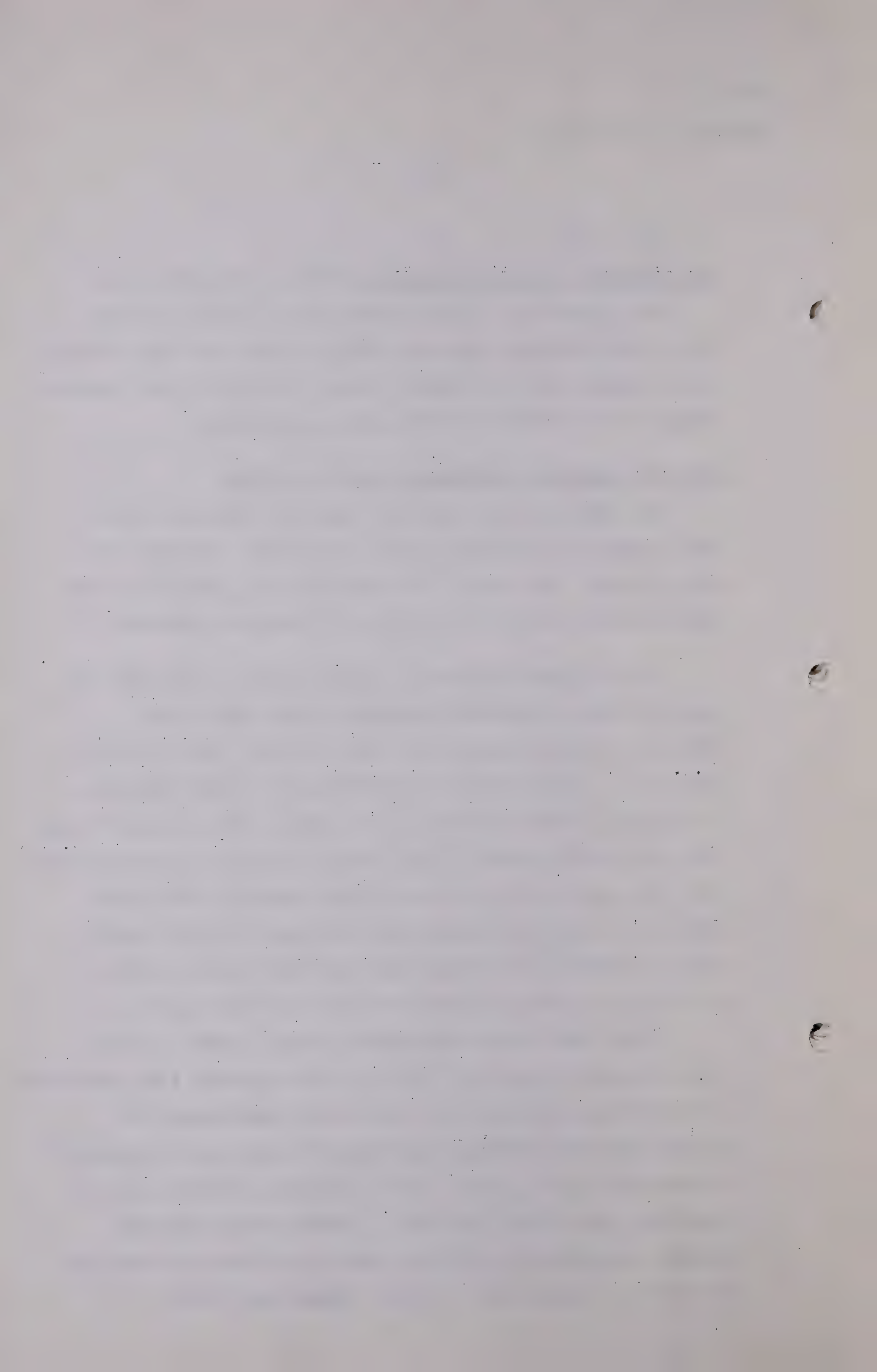
As indicated in the statement the allocation of costs of the High Pressure Compressor Station have also been divided on the "Demand and Volumetric" basis, as allocated to "repressuring" and "market" in their proper proportions.

THE HIGH PRESSURE TRANSMISSION LINE TO MADISON

The costs of this unit have also been divided on the same principle as detailed in the statement, from which it will be noted that G.O.R. is charged only in respect to that portion of the line it uses beyond the Hartell Junction.

In my original submission, Mr. Chairman, we did make the proposal that the entire transmission line was a joint venture, we might say, for the two accounts, G.O.R. and the B.A. area. At the time of considering the Zinder principle, in applying it and analyzing it, we came to the conclusion that the proper application of that formula would be to charge G.O.R. only that portion of the line from the Hartell Junction to Madison, and the allocations have been made on that basis. That is, instead of breaking this particular unit in two, one for that section and the other for the first part.

In the case of the transmission line, as will be seen from reference to Exhibit 113 B, it was suggested that conditions of the G.O.R. operations were such that reimbursement to British American Gas Utilities should be made over a period of 5 years and not 10 years. In the meantime, however, we are operating under Board Order No. 9, which for the interim period, contemplates a 10 year period for paying the share of the G.O.R. transmission. If the Board sees fit to



Argument by Mr. Harvie.

-6873 -

allocate costs under this formula, Order No. 9 should be amended accordingly.

I do not imagine that presents any problem.

REPRESSURING LINES

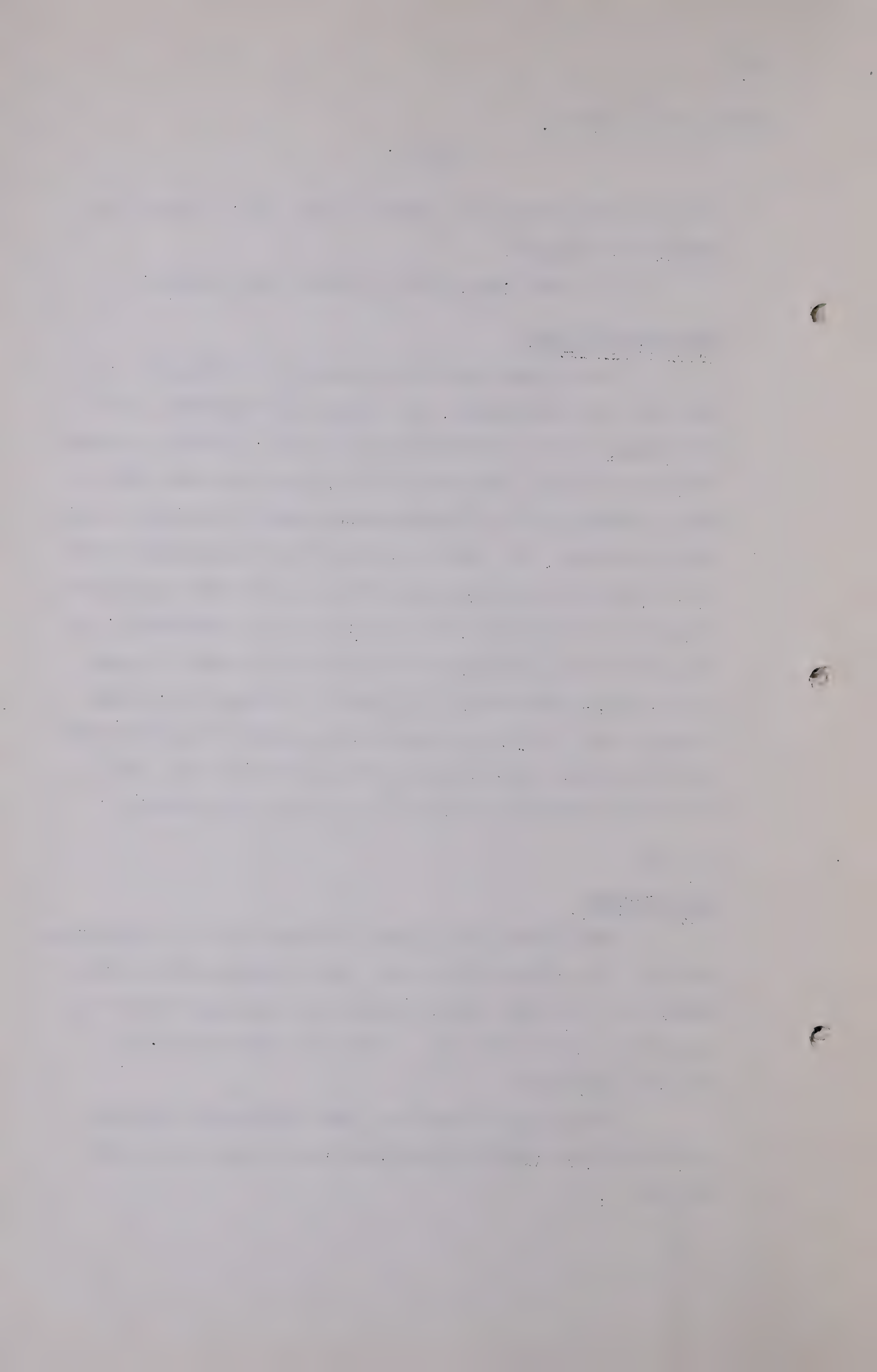
Here again the same principle was followed. In this case the total cost, both demand and volumetric, has been charged to the repressuring operation. It will be remembered that it was suggested by the Counsel for the City of Calgary that no cost of repressuring should be charged to the Calgary market. It will be noted from the statement that this suggestion is given full effect to under the application of the Zinder formula so far as this item is concerned. By reference to the statement showing the allocation of costs of High Compressor Station previously referred to, it will be noted that the Calgary market also, under the application of this formula, is relieved of that portion of the cost of the High Compressor Station related to repressuring.

Then the

WATER SYSTEM

Both demand and volumetric portions of the operating expense of the Water System have been allocated 75% to the British American Oil Company Absorption Plant and 25% to the general cost of operations. That is in accord with the evidence submitted.

Following the routine just outlined we allocate the total costs, \$2,466,833.13 for the 10 year period, as follows:



Argument by Mr. Harvio.

- 6874 -

(1)	Absorption Plant	\$411,544.43
(2)	G.O.R. Gas	45,627.75
(3)	Market	1,749,332.91
(4)	Repressuring	260,328.04

I will deal with those in the percentages and how they relate to each other while reading from the statement.

But it is to be noted that the total cost to market of \$1,749,332.91 related to the M.C.F. cost per unit of field sales to market for the 10 year period is 1.15 cents. Assuming our estimates of the Cost of Hearing and the Deficit on Operations to date are reasonably accurate, this unit cost would be increased to 1.27 cents.

Both these figures of 1.15¢ and 1.27¢ are the average figure over the 10 year period. In fact they vary from 1.61¢ in 1945 to .87¢ in 1954. We believe that an average 1-1/3¢ would be an appropriate figure to use in the preliminary computations.

This means that there will only need to be added 1-1/3¢ to Madison's unit cost of gas sold to market to pay all the costs of the B.A. Utility that is charged to market over the full 10 year period.

It will be noted that we have charged certain of the operating expenses to "market" and to "repressuring".

"Market", in this case, includes all scrubbed gas sold by Madison to both the Calgary market and others.

There has been suggestions that some or all of the following parties should pay for "repressuring" costs.

First, it has been suggested that the crude producers should carry it all. Others have suggested that it should be borne by the crude and the gas cap well producers. And

Argument by Mr. Harvie.

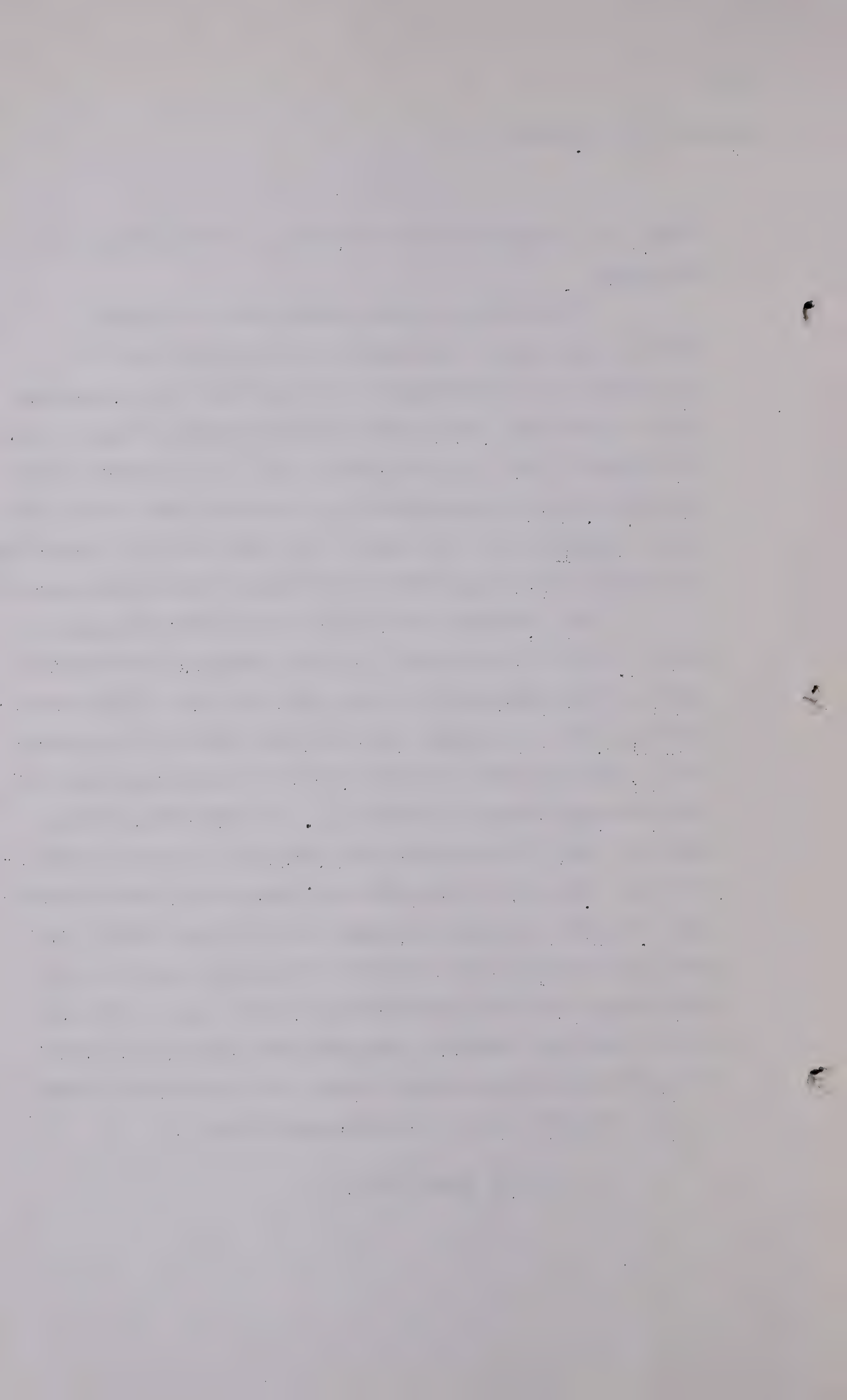
- 6875 -

others have suggested that it should be borne entirely by the market.

If the Board should decide that the expense should be charged to the Market on the grounds that it increases the reserve available to the City, then, according to our estimates, there would be an additional charge of .2¢ or 1/5th of a cent per unit to be added to the price of gas marketed, which is approximately an over-all cost on the basis of our estimates of a cent and a half that would be charged on the market price of gas sold by Madison to the Madison market.

Now, we might take a look at Exhibit 184, pages 8 and 9. You will note that it is the proposed allocation of costs of operations for the year 1945 only, but it is illustrative, both in principle and with some degree of accuracy, how it could be used, I think, for the remaining periods if this principle should be adopted. The first item is the estimated cost of gathering gas, including the cost of compressing, the cost of gathering and compressing low pressure gas. It will be noted that under the heading "Total", the total cost of this unit operation of gathering gas from the low pressure station was \$159,660.94 in the year 1945, and that of that the operating expenses were \$34,552.84, which is an item that goes entirely under the "volumetric" column, and you will note that it is in place there.

(Go to page 6876)



T-2-1 11.15 A.M.

Argument by Mr. Harvie.

- 6876 -

The next is the administration of \$6,304.00, which also is placed in the volumetric column. Then the amortization of \$54,379.10 which is placed entirely in the Demand column and then

MR. CHAMBERS: Would you mind me interjecting just to clear up a matter that I might think important. This amortization denominator is that the 25 million that you show on this Exhibit 185?

MR. HARVIE: The denominator in each of these units is the throughput of the unit. In this case it will be the throughput of the wet gas gathered and is an entirely different item than that that goes to market.

MR. CHAMBERS: Then you do not use one constant denominator all the way through.

MR. HARVIE: Each unit has its own denominator.

MR. CHAMBERS: The total denominator, is it the 38 or the 25 that is shown in that Exhibit 185.

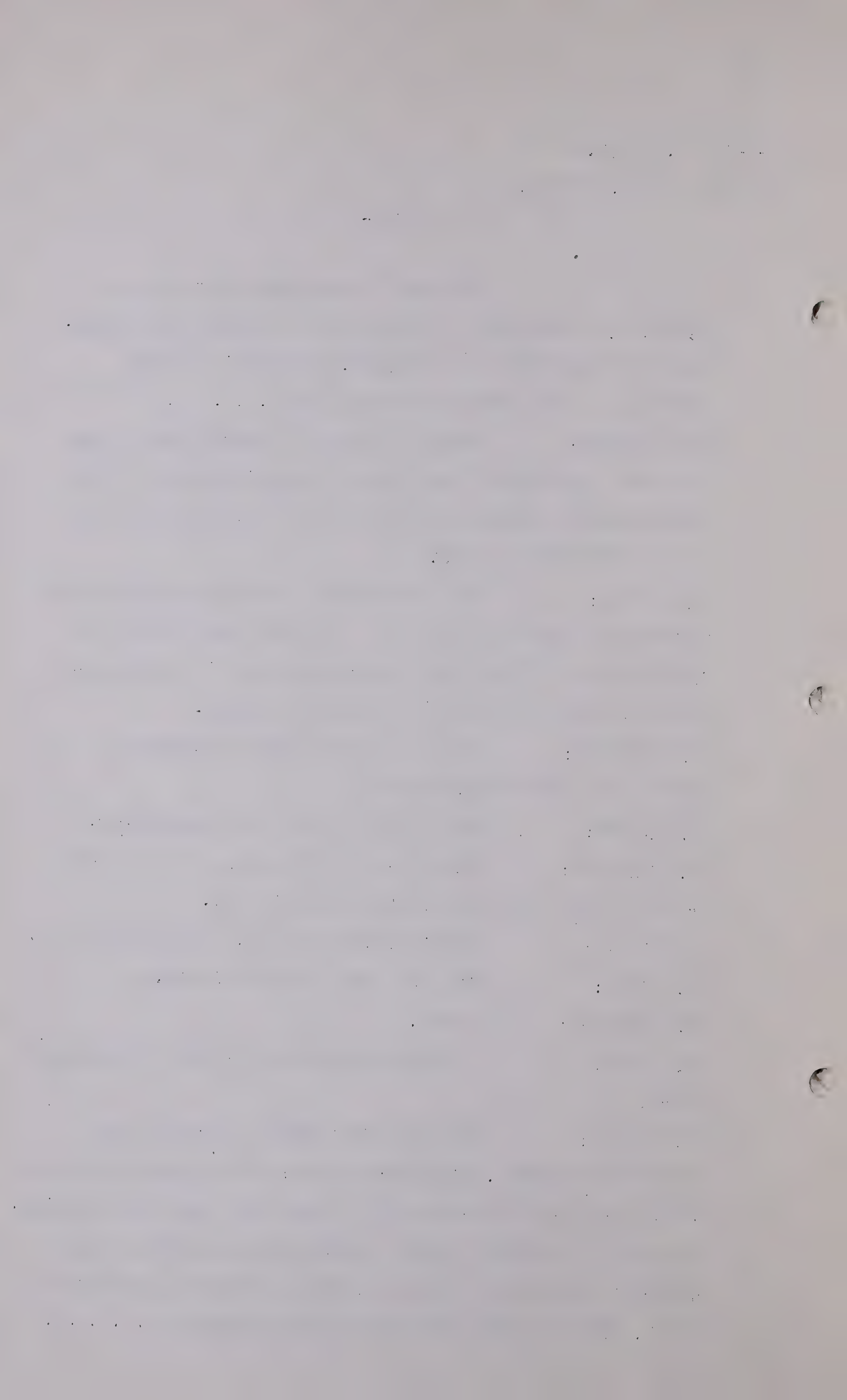
MR. HARVIE: It might well not be. It would not be.

MR. STEER: The wet gas gathered is 48.2.

MR. CHAMBERS: I see.

MR. STEER: I suppose that would be the denominator there.

MR. HARVIE: For the first unit, we come to the compressor station. The second unit, the denominator would be the gas actually compressed at the high pressure station. It would be the same figure as the wet gas gathered less absorption shrinkage, loss and flared downstream absorption plant. And the operating expenses or operating



Argument by Mr. Harvie.

- 6877 -

MR. CHAMBERS: Is the denominator for the transmission lines from your B.A. Plant to the Madison Scrubber the 25 million residue gas to market or the 38 million total residue gas?

MR. HARVIE: You are looking where?

MR. CHAMBERS: Exhibit 185, the 3rd last column, 25 million.

MR. HARVIE: As far as the transmission line is concerned the allocation for that part of it, that is from the B.A. High Compressor Station to the Hartell junction, is the amount of gas that goes to market and then the B.A.

MR. CHAMBERS: The 25 billion or 38 billion.

MR. HARVIE: Billion it is.

MR. CHAMBERS: That is a point I think is very important.

MR. HARVIE: It is the 3.278 you will find in Exhibit 185. I think generally speaking, Mr. Chambers

THE CHAIRMAN: Your denominator will be different for each year.

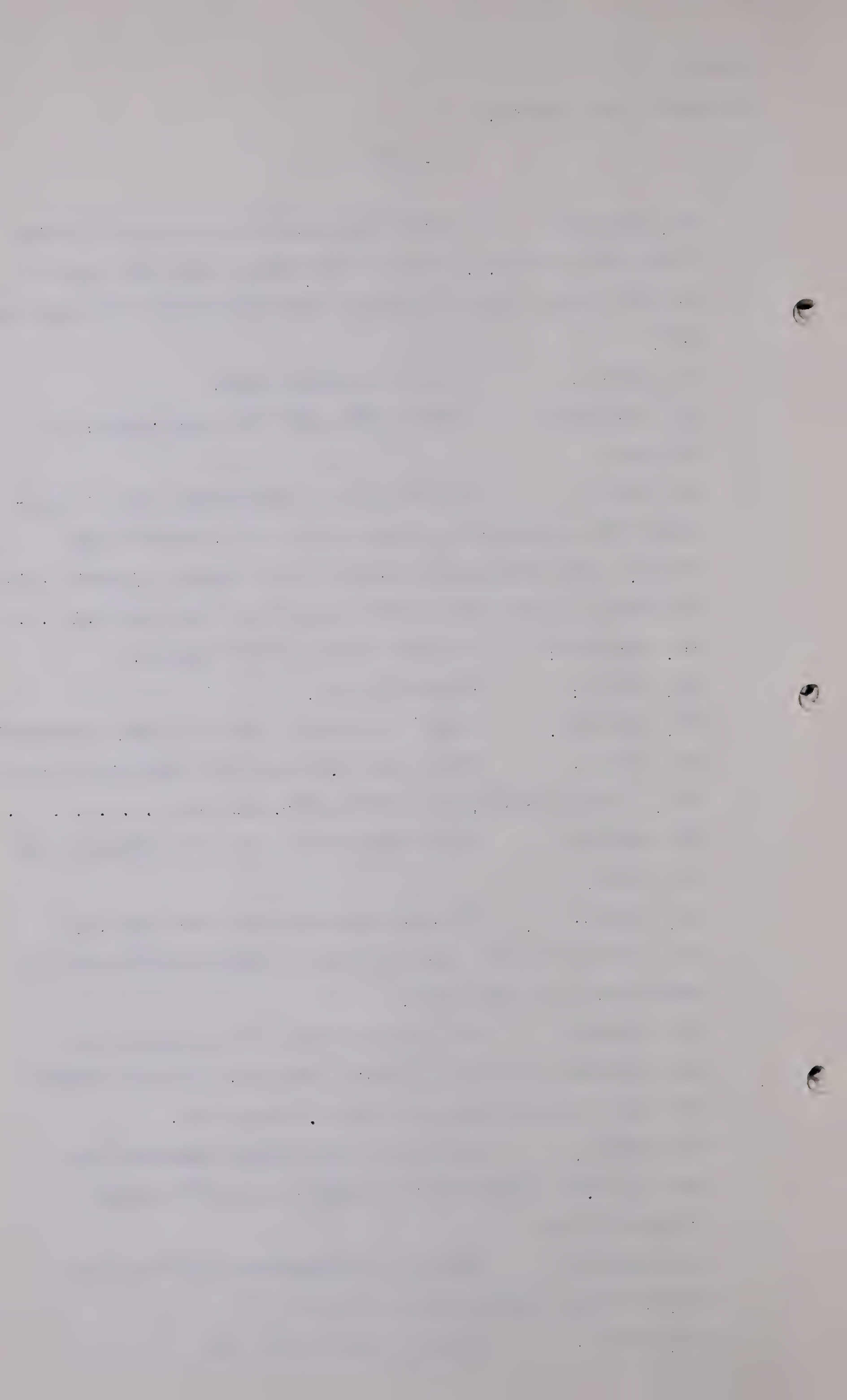
MR. HARVIE: For each year and for each unit. We have in Exhibit 185 also shown and on Exhibit 184 we use the exact factor in each case.

THE CHAIRMAN: But on your first item on page 8 you have Estimated Cost of Gathering Wet Gas, then your factor for that for this year would be 1.03 would it?

MR. HARVIE: The factor for wet gas gathered this year is 3.278 billion which appears in the 7th column of Exhibit 185.

MR. CHAMBERS: That is the numerator is it not and 25.818 is the denominator is it not?

MR. HARVIE: Where do you get the 25?



Argument by Mr. Harvie.

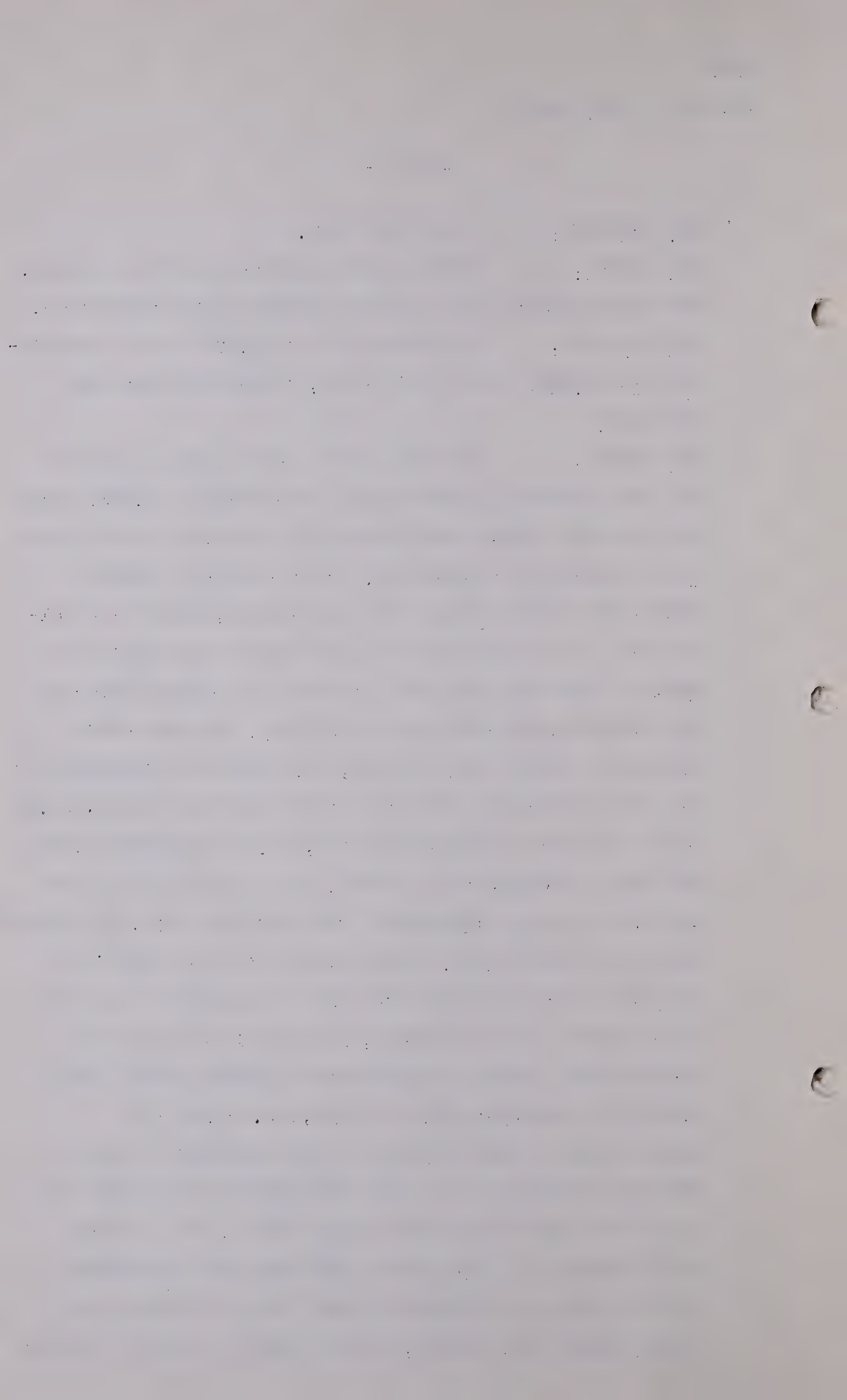
- 6878 -

MR. CHAMBERS: Well the total.

MR. HARVIE: That is the sum total for the 10 years. Now we are dealing only on this statement with volumetric.

MR. CHAMBERS: The enumerator is 3.278 and the denominator is 25.818, is that not right, in order to get your fraction?

MR. HARVIE: It will be the residue gas to market plus the residue gas repressured at a total of 4.983. These are the same figures used under the next item in this point we are coming to in a moment. So far we have made no distribution then between the two columns, Demand and Volumetric. In the next phase we deal with distribution to users or consumers and there is where your denominator and your through-put factor come into play. So under this formula the total cost is \$159,660.94 which is inclusive of all items applicable to this unit and is divided \$40,856.84 in the Volumetric column and \$118,804.10 under Demand. The next step is Allocation to Users. In the left hand column under the heading "Allocation " you will see (D). (D) signifies demand or demand load. So the Absorption Plant as it consumes in its own operation 15% is charged the full 15% of the demand load to market, which again of course is divided later between repressuring and other items, and is charged the remaining 85% of \$100,983.48 under the Demand column. That disposes of the allocation of those two parties which are the only two parties using that line up to that point in the manner indicated. Then we come to the Absorption Plant, that part that does not consume but that uses on a volumetric basis and goes through and passes through to market, which is 85% in effect of the gas



Argument by Mr. Harvie.

- 6879 -

gathered under Volumetric. The Absorption Plant consumes 15% and it pays for that outright. It is charged to that. That amount is \$6128.53 under the Volumetric heading. Then the Absorption Plant is further charged with 50% of the 85%, or 50% of the remaining 85%, which is $42\frac{1}{2}\%$ of 100% or \$17,364.16. Then the repressuring which is 17% of $42\frac{1}{2}\%$, of 85%, or a total of $14\frac{1}{2}\%$, is charged \$5924.24. That is the Gas Gathering costs of that operation of the Gas throughput that is ultimately repressured in this year. The market similarly is charged with 33% of $42\frac{1}{2}\%$ or an over-all of 28% under Volumetric. Then these are allocated as will be shown in the columns to the right, "Summary of Proposed Allocation of Costs." That means the Absorption Plant pays \$17,820.62 for the gas, that is the Demand factor of the gas consumed by it. It pays \$6,128.53 which is the Volumetric factor of the gas consumed by it and it pays 50% of the Volumetric factor or \$17,364.16, making a total of \$41,313.31. the Absorption Plant would pay towards the cost, the over-all cost of gathering the gas out of a total of \$159,660.94 which is in this particular case 26% of the total cost.

MR. STEER: I do not understand where these figures of 50%, 17% and 33% that you speak of, of the 85% come from.

MR. HARVIE: Well I will try to see if I can enlighten you.

MR. CHAMBERS: I was wondering the same thing myself because I do not recall Mr. Zinder putting anything like that in.

MR. HARVIE: I will try and explain it this way. The gas gathered represents 100%. That 100% under the demand load is distributed 15% to the Absorption Plant,

Argument by Mr. Harvie.

- 6880 -

because it consumes it and the gas does not go further. It is the only beneficiary in respect of that particular 15%. That leaves 85% that goes further. That 85% is divided in the first instance two ways. It is divided in the first instance between the Market and the Absorption Plant 50-50. So 50% of the 85% is $42\frac{1}{2}\%$.

MR. CHAMBERS: Why is that?

MR. HARVIE: Because that is the application of the formula.

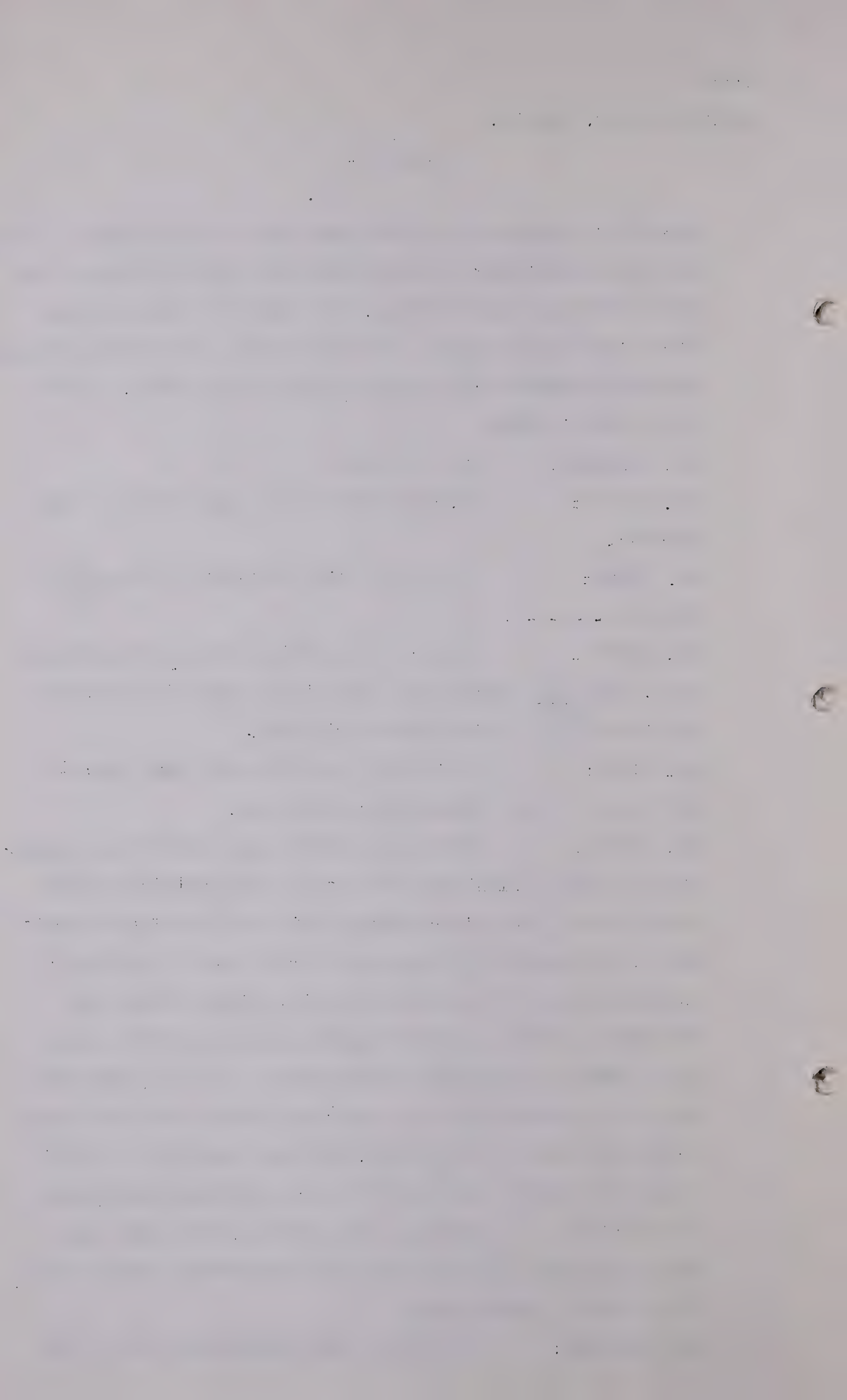
MR. STEER: It is not the application of any $\frac{100}{185}$ formula

MR. HARVIE: We are now talking purely of the Demand load. The $\frac{100}{185}$ formula, if you wish to call it that, is applicable only to the Volumetric load.

MR. STEER: This 50, 17 and 33, as I read it, is applicable to your Volumetric suggestion.

MR. HARVIE: To the volumetric but not to the Demand. The absorption plant pays 100% of the Volumetric and 100% of the Demand load in connection with the 15% that it consumes. It pays all the charges for the 15% it consumes, no matter what column you put it in. So that there is 85% left and that is divided again according to the users by the Demand or Volumetric application. I think maybe it would be a problem for me to try and explain this but I will be very glad and I am sure Mr. Donellan would be to sit in at any time and go over it, if he can be of any assistance in explaining it in detail. If, however, there are any other questions you want to ask at the present time, I will do my best to answer them.

THE CHAIRMAN: I did not quite understand it. I was



Argument by Mr. Harvie.

- 6881 -

under the impression that by taking your figures with the theory propounded by Mr. Zinder that I would get the result. That is what I was assuming.

MR. HARVIE: Yes, I think that is so.

MR. STEER: Mr. Zinder - I would like to get this thing clear - because it is a matter of some importance - Mr. Zinder did not say anything in his evidence about the 50 or 17 or 33 per cent according to my recollection.

MR. HARVIE: For the simple reason that Mr. Zinder's illustration was applicable only to the repressuring feature of it on which he was making a submission on behalf of the Producers. His illustration applied to that. That is rather an unfortunate illustration because it happens I think that the repressuring cost is charged up to one individual and there is no allocation of it.

MR. CHAMBERS: That is one of the points that I want to get clear. As I understand, Mr. Harvie is not suggesting that this is specifically what Mr. Zinddr recommended but he is taking what Mr. Zinder said in the record and applying it as he thinks is the logical application.

MR. HARVIE: He never broke it down and this is being applied according to the principles that he recommended, as I said in my submission this morning. It might be that while we have just used the term repressuring the Board, on the evidence, will say: "Repressuring", we will change that to "Producer" or they might say we will change that to "Market". They might well say we will divide it between the two, which would be another allocation such as was done by G.O.R.

C-2-1 11.30 A.M.

Argument by Mr. Harvie.

- 6882 -

MR. STEER:- What is the significance of these figures, 1.705 thousand and 3.278 thousand?

MR. HARVIE: 1.705 thousand is that portion of the total throughput with reference to the 4 billion that was repressured in 1945. There was actually that went through the system and was repressured in the B.A. area that figure of 1,705 million cubic feet.

In addition to that there was repressured in the High Pressure Station and went to market 3.278 billion and those figures can all be taken off and followed through from Exhibit 185. I think, Exhibit 185, if you will just put it in front of you it might throw a little light on this very simple formula.

For the year 1945 you will note that the net residue gas was, - the last column from the right, - there are 4.983 billion residue gas in that year. Of that residue gas, 3.278 went to market and that is the factor which you see under "Market" under, the last item under "Allocation", sub-heading "Market".

Again 1.705 is the gas which was repressured in that year, which is the same figure as above that of "Market" under the heading "Repressured".

Now those are the factors which have been used in dividing the cost, the volume which went to each use as a factor.

MR. CHAMBERS: But what I would like to know is, in trying to tie it into all this, why did you take 50% of 85% for the Absorption Plant and then you take the other 50% and you allocate it as between the 17 thousand.

MR. HARVIE: Well in the first instance there is a

Argument by Mr. Harvie.

- 6883 -

3-stage operation in the allocation. The allocation is an allocation according to demand of equipment requirements. We suggest, and I think there is no doubt about it, . . .

MR. CHAMBERS: Is that the demand of the market or . . .

MR. HARVIE: No, the demand is this that if, if the gas gathering line were built solely for the market, it could be 15% less in capacity than it is.

THE CHAIRMAN: I wonder if we might get it in this way, who prepared this statement?

MR. HARVIE: So we say the demand factor of that is, our market was increased by 15% through the fact that the absorption plant operation takes 15% out and requires that at all times, whether any goes to market or whether it does not. It takes that, it is not available for market so the total capital cost of the installation is divided in respect to that peak requirement load, 15% to the Absorption Plant, 85% to this down-stream, which we call the "Market".

I am sorry, Mr. Chairman.

Q MR. CHAIRMAN: Who prepared the statement, Mr. Harvie?

MR. HARVIE: Mr. Donellan.

THE CHAIRMAN: I know it is not easy for we lawyers to follow chartered accountants any more than it is easy for them to follow our peculiar methods and perhaps it would be fairer to you if Mr. Donellan would tell us the basis himself.

MR. HARVIE: Would you like to do that now?

THE CHAIRMAN: We might as well do it now, if you can, Mr. Donellan, and right from where you are.

MR. DONELLAN: What we started out to do was to apply the principles of the Zinder formula; not that we were trying to direct any fundamental principles of only applying

Argument by Mr. Harvie.

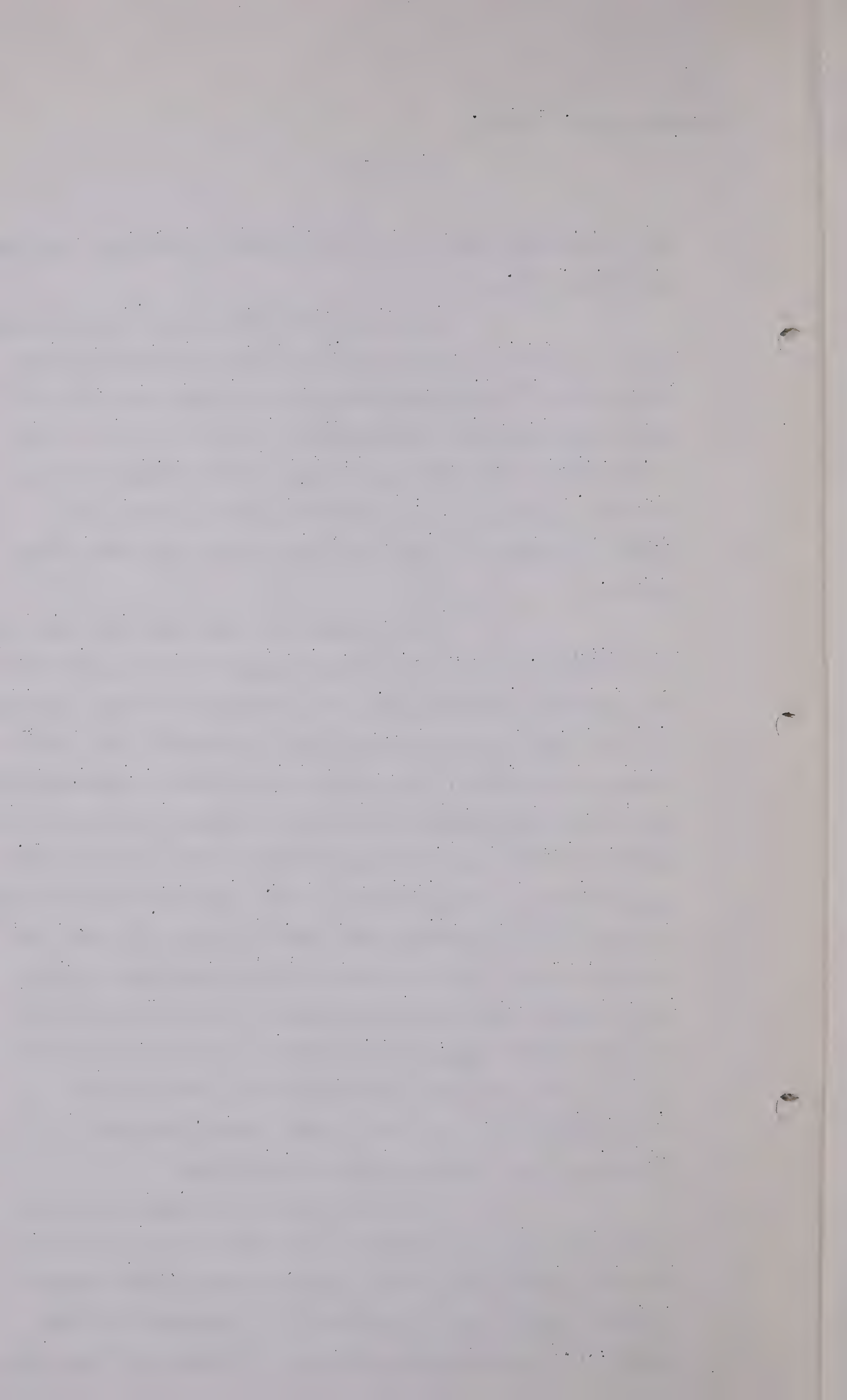
- 6884 -

and allocating the cost of the gathering lines and the low pressure costs.

As far as the demand load is concerned we had no difficulty in arriving at the opinion that the capacity of the line was needed to meet the peak loads of market requirements and the demand load of the line must necessarily follow the application of the formula and be divided in its end use; 15% of the end use being the quantity consumed in the Absorption Plant and 85% in the Market.

When we came to the volumetric section we hesitated. I was very much inclined to the opinion that my original evidence before the Hearing was sound. However giving further consideration and due weight to the cross-examination which I had and realizing that our Absorption Plant was not primarily built as a public utility or to meet public utility requirements, I thought that it was a fair application of the principles of Mr. Zinder to say that all gas has a use in getting the absorption product out, and 50% of all charges should be carried by the absorption plant. And although that is quite contrary to the very definite evidence that I gave, we accepted it and that 50% of the charges should be otherwise allocated. There was no difficulty there. We went to the general formula to determine what is the ultimate destination.

I absorbed 50% of the charges in the gathering, while the product that came out of the plant, - take the first year as an example, we had 4.983 million feet of gas and the disposition of it was 3.278 to the market, 1.705 to repressuring, so I divided the remaining



Argument by Mr. Harvie.

- 6885 -

sections of the charges in that ratio.

Is that clear, Mr. Steer?

MR. STEER: It is clear to me. You simply take the approximate 50% should be charged to the absorption plant without basing it on any figures at all.

MR. DONELLAN: Well instead of going back, - the difficulty with your own formula, Mr. Steer, is that I want to maintain for the record the fact that the absorption plant is 15% of both demand and volumetric. I had no difficulty at all in saying 15% Volumetric and Demand should be borne by the Absorption Plant in respect to what was consumed.

Now then, what was used, I say that is where I take the 50%.

THE CHAIRMAN: Are you satisfied, Mr. Chambers?

MR. CHAMBERS: I am satisfied with the explanation of what was done.

THE CHAIRMAN: Oh yes, I realize there is an implied limitation.

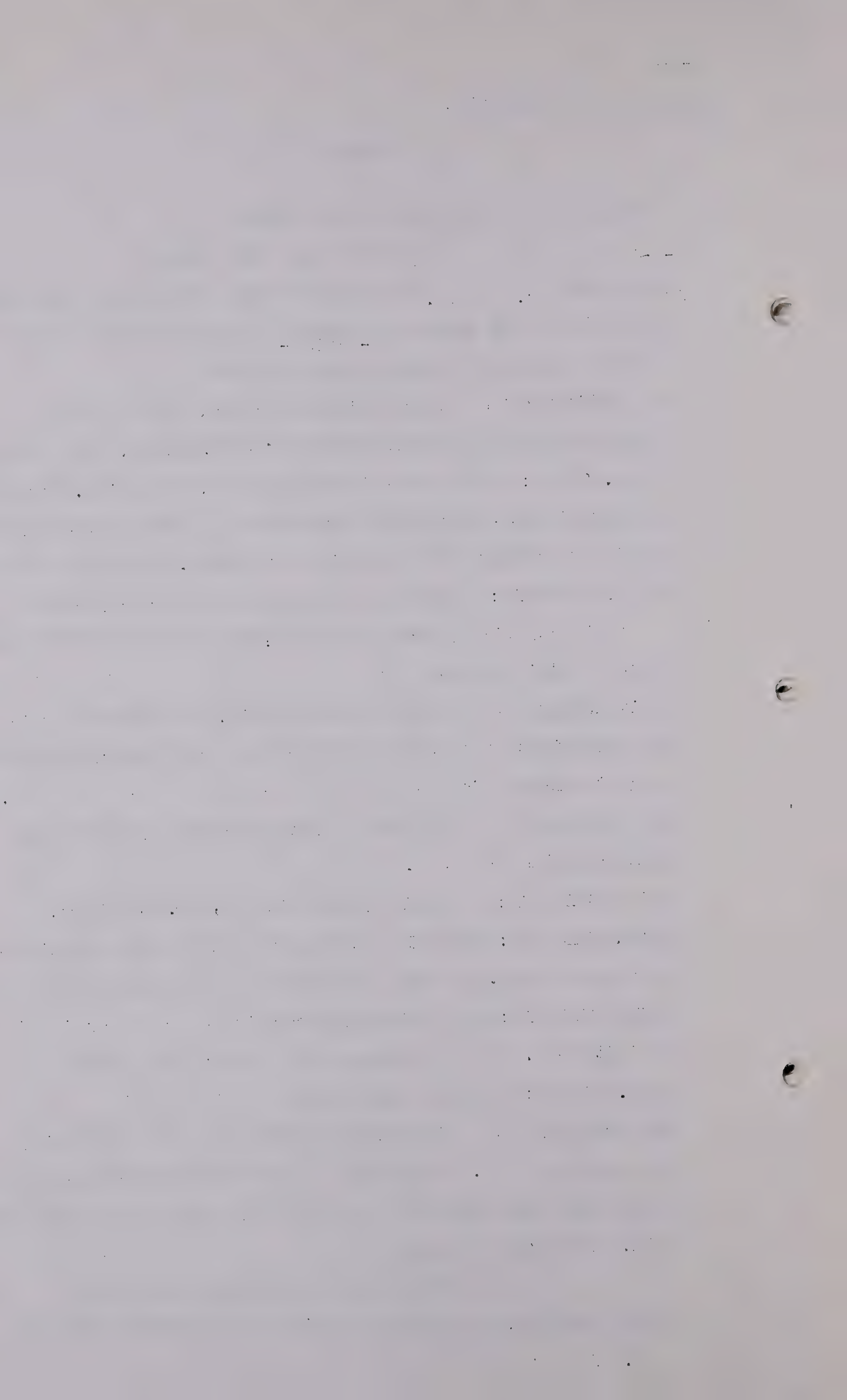
MR. HARVIE: Now I think that is a delightful precedent, Mr. Chairman. If we get into trouble again, I will call on Mr. Donellan in these technical matters and I thank you for making the suggestion.

MR. HARVIE: I presume that is all that can be helpful that we can do about that.

THE CHAIRMAN: The other follows the same principle?

MR. HARVIE: Entirely. I think the number 1 is the comparable one because it is by far the most complicated in view of the way it works.

The second is really considerably simplified and when you come to the repressuring from one



Argument by Mr. Harvie.

- 6886 -

customer there is nothing to it, whoever that customer may be and that customer might be divided into two or three of course.

Then the "Price of Scrubbed Gas".

MR. STEER: Excuse me one moment, Mr. Harvie, you said one thing, that the total cost added to the cost of Madison gas delivered to market for all B.A. gas would be a cent and a half.

MR. HARVIE: Yes.

MR. STEER: Where does that appear?

MR. HARVIE: That will come in.

MR. STEER: You have not dealt with it yet?

MR. HARVIE: Not yet. That will be under, - it is the data from which that computation is made, Mr. Steer, and I should say, though, that I have dealt with it all that I intend to, as contained in pages 4, 5 and 6 of Exhibit 184 and I wonder if Mr. Donellan might answer that. He has the figures right before him.

THE CHAIRMAN: It is a matter of the total operating costs for the 10 year period.

MR. DONELLAN: That is it.

Simply take page 6 of the Exhibit, and you will find that, for 1945 the allocation of costs. The specific example there is 72.79 for 1945 and 70.92, from page 7. Divide that by the throughput and it gives you 1.15.

MR. STEVENS-GUILLE: What throughput figures?

MR. DONELLAN: The throughput of the Madison market.

THE CHAIRMAN: That would be your 25 billion?

MR. DONELLAN: No, it is the total, Mr. Chairman, the

Argument by Mr. Harvie.

- 6887 -

total requirement. Mr. Harvie covered that in his remarks.

MR. HARVIE: That is the 4 billion for 1945.

MR. CHAMBERS: 16 billion, is it not?

MR. DONELLAN: 16.2. It is the same figure used in your own statement, Mr. Chambers, 16,149,683,000.

MR. HARVIE: I might say, Mr. Chairman, that Mr. Donellan and his associates, to my knowledge, have given this whole matter very careful consideration. As I intimated, we thought it was one of the most contentious points that we had to deal with and it was only after careful consideration of this and all other principles and weighing one as against the other, that this was adopted as being the fairest that had been submitted or that we could think of and once it was adopted we took the attitude that having adopted it, let the chips fall where they may. Unfortunately they fell on the B.A. Absorption Plant to the extent of 40% more than what they had suggested, 15 to 26. On the other hand even after that, the Company still says that it thinks it is right and the same remarks apply to all other, the allocation under all the others.

(Go to page 6888)

Argument by Mr. Harvie.

- 6888 -

PRICE OF SCRUBBED GAS

We submit that the price of scrubbed gas sold by Madison should be a uniform price to all customers, except to meet special situations such as "Bow Island Re-pressuring" or some market such as the Nitrogen Plant, in which latter cases these should be dealt with separately on their respective merits by the Board from time to time.

I just want to make myself clear there that generally speaking all Madison gas, scrubbed gas marketed by Madison will be of uniform price under special circumstances such as Bow Island situation we will say, our submission suggests that should be dealt with separately on its merits. If there is some other good market that is economic and desired by consumers which might have the effect of netting back to them less than that but save them possibly the cost of repressuring that can be dealt with when we are faced with the situation. But to just comment on the phase raised by you yesterday Mr. Chairman, as to whether a producer now tied into the system should have any right to withdraw the gas from the system for his own use and benefit. I think our viewpoint is that that again would be treated as a special application. If it is scrubbed gas then there may or may not be granted to him a special price. If it is scrubbed gas he wants, any price he pays for it, that would take that gas out of the total throughput of this system. He would have to be charged with his share of the benefits he has derived or will continue to derive. It would be a matter of the price, not that it could not be sold elsewhere.

THE CHAIRMAN: And possibly the simpler way would be to make him underwrite his share of the capital invested.

Argument by Mr. Harvie.

- 6889 -

MR. HARVIE: That would be one way of doing it which in turn could be related to his unit use.

The scrubbed gas market price should be computed by adding the total of the following unit prices, or such of them or such parts of them as the Board thinks proper to include in the market price, namely :

1. The total of Madison's unit cost of gas sold to the market. And there I think it is well to point out that in Madison's cost is the total scrubbing cost of all gas that goes to market and in our submission from now on in this connection we eliminate that from our cost, or our net.
2. The total of B. A. Utilities unit cost of its operations, exclusive of repressuring, chargeable to market.
3. B. A. Utilities repressuring charges.

We have segregated, Mr. Chairman, just so that they can be dealt with separately should the Board think it proper to do so.

4. Well Head Price,
and the total of these should be the price at which scrubbed gas is sold by Madison.

In the event that there are any special prices, such as for "Bow Island Repressured Gas", then an adjustment can be made in the average price to cover such sales.

We submit that in the case you are now dealing with these are the sole factors you should take into consideration. I say that knowing that I have left out of that statement the other usual factor that I think normally is your duty to consider. That other usual factor would

1. The first part of the document is a list of names and addresses of the members of the committee.

2. The second part of the document is a list of names and addresses of the members of the committee.

3. The third part of the document is a list of names and addresses of the members of the committee.

4. The fourth part of the document is a list of names and addresses of the members of the committee.

5. The fifth part of the document is a list of names and addresses of the members of the committee.

6. The sixth part of the document is a list of names and addresses of the members of the committee.

7. The seventh part of the document is a list of names and addresses of the members of the committee.

8. The eighth part of the document is a list of names and addresses of the members of the committee.

9. The ninth part of the document is a list of names and addresses of the members of the committee.

10. The tenth part of the document is a list of names and addresses of the members of the committee.

11. The eleventh part of the document is a list of names and addresses of the members of the committee.

12. The twelfth part of the document is a list of names and addresses of the members of the committee.

13. The thirteenth part of the document is a list of names and addresses of the members of the committee.

14. The fourteenth part of the document is a list of names and addresses of the members of the committee.

15. The fifteenth part of the document is a list of names and addresses of the members of the committee.

16. The sixteenth part of the document is a list of names and addresses of the members of the committee.

17. The seventeenth part of the document is a list of names and addresses of the members of the committee.

18. The eighteenth part of the document is a list of names and addresses of the members of the committee.

19. The nineteenth part of the document is a list of names and addresses of the members of the committee.

20. The twentieth part of the document is a list of names and addresses of the members of the committee.

21. The twenty-first part of the document is a list of names and addresses of the members of the committee.

22. The twenty-second part of the document is a list of names and addresses of the members of the committee.

23. The twenty-third part of the document is a list of names and addresses of the members of the committee.

24. The twenty-fourth part of the document is a list of names and addresses of the members of the committee.

25. The twenty-fifth part of the document is a list of names and addresses of the members of the committee.

26. The twenty-sixth part of the document is a list of names and addresses of the members of the committee.

27. The twenty-seventh part of the document is a list of names and addresses of the members of the committee.

28. The twenty-eighth part of the document is a list of names and addresses of the members of the committee.

29. The twenty-ninth part of the document is a list of names and addresses of the members of the committee.

30. The thirtieth part of the document is a list of names and addresses of the members of the committee.

31. The thirty-first part of the document is a list of names and addresses of the members of the committee.

32. The thirty-second part of the document is a list of names and addresses of the members of the committee.

Argument by Mr. Harvie.

- 6890 -

under normal circumstances be as to whether the purchasers have "the ability to pay". Efforts were made to have evidence on this point presented to the Board, but the purchasers of the gas have failed to supply this information.

We therefore suggest that they must now take the consequences.

We believe the consequence is that it is the Board's duty to set such rate as the evidence before it justifies, and under the circumstances, absolutely ignore the factor as to whether the purchasers of the gas have or have not the ability to pay for it.

VALUE OF GAS AT THE WELL-HEAD

We are of the opinion that a substantial wellhead price of gas should be fixed. That gas has, in our opinion, undoubtedly a commodity value and that every endeavour should be made to determine that value and see that the Producers are reimbursed for the value of the gas which is produced. Attached to Exhibit 126 is a series of schedules and charts showing the value of gas at the wellhead at various points in the United States.

THE CHAIRMAN: Is that Mr. Zinder's Exhibit ?

MR. HARVIE: Yes, I think so.

I think it is of interest to very briefly outline in a general way the history of natural gas in Alberta, to see if we can gain any useful information that would be a guide to us in the consideration of our present problems.

Possibly the first commercial gas used in Alberta was that found in a well drilled in East Calgary, and which for years, and, in fact, still is or is capable I believe, of supplying gas in that district. I have not had the advantage

Argument by Mr. Harvie.

- 6891 -

of examining the records showing the early gas operations from this well.

Then we have the rather hectic career of natural gas in the Medicine Hat - Redcliffe district, with which you, Mr. Chairman, are quite familiar, and will possibly agree with me that we can learn little from the manner in which it was developed and used that would be helpful to us in dealing with our present problems.

Then the Bow Island - Foremost fields, on which the original Calgary gas system was based, and which was the sole supplier to the Calgary system until some 25 years ago, when a little gas from Turner Valley was first tied into this system, and which fields still form part of the system. I am of the opinion that the Bow Island-Foremost-Calgary system was founded and operated on what might be considered reasonably sound investment and utility principles, and possibly we can get some guidance from the history of this operation. It will be remembered that in view of the limited known reserve from these fields, heavy industrial consumption was not encouraged, and that by the early 1920's (1921) a somewhat critical shortage of supply was faced, as a result of which the then small developed supply in Turner Valley was tied into the system and arrangements made, by Agreements between the Calgary Gas Company and Royalite Oil, for the purpose of encouraging the latter to carry on a gas development program in that field. The Contract (Exhibit 69) contained the well known provisions of granting Royalite the exclusive right to supply the Calgary market and setting a price as high as 13¢ for the gas in the field. I would not say that it was solely this encouragement that resulted in the program from which Royalite No. 4 Well and the present Turner Valley field

[illegible]

• • •

Journal of Management Studies, 19(6), 701-718.

Argument by Mr. Harvie.

- 6892 -

resulted, but I do say at least, it must be most apparent that it was a decided factor. True, it might well be that the finding of naphtha in the gas encouraged what we now look upon as "extravagant and wasteful development", in the Turner Valley field, but this is aside from the point. The fact is that an enormous reserve of gas was developed in Turner Valley, which resulted in a steady reduction in the field price to slightly less than 7¢, approximately one-half of the original price, and allowed of granting every inducement to consumers of all possible types of consumption of the gas, which is the situation we found at the time of the passing of this Act.

I do not know what, sir, I might also say there. So far as I know on the whole that while the gas price has gone down in the field from 13¢ to something now under 7¢, I do not know of any increases in the field prices that have been made in that period if we take the 2¢ that has been paid to those that have received it.

THE CHAIRMAN: Yes, I think it is unfortunate we have not a breakdown of the 13¢ and of the 7 $\frac{3}{4}$ ¢.

MR. HARVIE: I would like to have had it.

THE CHAIRMAN: It is not available. At least Mr. Stevens-Guille did not know of its existence. You do not have a breakdown of the 7 $\frac{3}{4}$ ¢ that is being paid currently for gas. That is how the 7 $\frac{3}{4}$ ¢ is made up ?

MR. HARVIE: I might be right, and if I am not right, probably Mr. Morrison knows as much about it as any person, but what experience I have had as an operator in the field, I know of no other price paid for production in the field other than the 2¢ one and I think for years there was not even that paid as all the gas was Royallite. They had the sole market

The first part of the paper is devoted to a discussion of the general principles of the theory of the structure of the atom. It is shown that the structure of the atom is determined by the laws of quantum mechanics, and that the laws of quantum mechanics are derived from the principles of the theory of the structure of the atom. The second part of the paper is devoted to a discussion of the general principles of the theory of the structure of the atom. It is shown that the structure of the atom is determined by the laws of quantum mechanics, and that the laws of quantum mechanics are derived from the principles of the theory of the structure of the atom.

The third part of the paper is devoted to a discussion of the general principles of the theory of the structure of the atom. It is shown that the structure of the atom is determined by the laws of quantum mechanics, and that the laws of quantum mechanics are derived from the principles of the theory of the structure of the atom.

The fourth part of the paper is devoted to a discussion of the general principles of the theory of the structure of the atom. It is shown that the structure of the atom is determined by the laws of quantum mechanics, and that the laws of quantum mechanics are derived from the principles of the theory of the structure of the atom.

The fifth part of the paper is devoted to a discussion of the general principles of the theory of the structure of the atom. It is shown that the structure of the atom is determined by the laws of quantum mechanics, and that the laws of quantum mechanics are derived from the principles of the theory of the structure of the atom.

Argument by Mr. Harvie.

- 6893 -

and it was just one integrated operation. It was only when they offered to share part of the market to others in their area of the field and said we will do it to the extent of buying your pro rata share of gas at 2¢ and delivered.

THE CHAIRMAN: And on a breakdown they may have been getting three or four ?

MR. HARVIE: Or ten.

THE CHAIRMAN: For their own gas.

MR. HARVIE: Or ten in those days with high pressure.

In comparatively recent years, as it became apparent that this large reserve was being depleted through the manner in which the field was being operated, our Government decided to take a definite hand in the matter, which resulted originally in the passing of the various Conservation Acts and, finally, The Natural Gas Utilities Act, under which this Hearing is now taking place.

While I have heard it said that the so-called wasteful manner in which the field was being operated can be solely attributed to the selfish interests of the Producers of the wells, it must be admitted that the Gas Company and the City of Calgary, as well as all other cities, towns and municipalities served by the Calgary Gas System, have derived almost unbelievable benefits through the encouragement they have been able to give to the establishment of new industries within their boundaries, through the fact of being able to supply gas as a fuel and raw product at prices so exceedingly reasonable.

At least up to the time of the passing of this Act no other major field has been discovered which could supply the reserves necessary to allow the Gas Company to maintain its flourishing position, and the cities, towns and

Argument by Mr. Harvie.

- 6894 -

municipalities which it furnishes, the industries that have been established therein, in the event that Turner Valley failed.

This being the case, can it be said that the Gas Company and the City of Calgary and the other municipalities, are not deriving a tremendous benefit through the operation of this Act by conserving for their use that large reserve that still remains in the Turner Valley field, rather than allow it to be dissipated, as these parties have suggested, for the sole benefit of the producer. If this is the case, should not these municipalities and the Company serving them, in the final analysis, be required to pay a fair and reasonable price for gas ?

THE CHAIRMAN: It is now twelve o'clock Mr. Harvie.

MR. HARVIE: I can finish this in a very few minutes.

THE CHAIRMAN: Well if you can.

(Go to Page 6895)

... ..

... ..

... ..

... ..

... ..

... ..

Argument by Mr. Harvie.

- 6895 -

The history of the Edmonton-Viking-Kinsella gas operation is of interest, and, without going into details, it might be said that, while the Viking-Kinsella gas fields are possibly the best, in view of their size, the nature of its gas, the ease and the economic way in which they can be developed and their location to market, its early history might be classed as a failure, and it was only through the reorganization, and what I understand to have been competent and efficient financing and management in comparatively recent years, that allows it now to be placed pretty well at the top of the list as a profitable operation for the owners, even though the citizens of the Province as a whole benefit very little from its ownership of the natural resources, the natural gas in that field.

There are numerous other small fields and gas services throughout the Province, such as Wainwright, Lloydminster and Vermilion, where I believe in all cases a more equitable distribution of rates and benefits has been put into effect by paying a reasonable remuneration to the Producer, the transmission and distributing systems, and a fair rate to the consumer. I believe it is in the interests of all parties concerned that an equitable balance between these various interests should at all times be maintained, rather than extending a benefit to one or more at the expense of the others.

I referred above to some of the lessons that we might possibly learn from the Bow Island-Foremost-Calgary Gas Company operation. For instance, I would suggest in this connection:

1. That if it had not been for the gas developed in Turner Valley, it is questionable whether Calgary would have been served with any material amount,

Argument by Mr. Harvie.

- 6896 -

if any, of gas over a large part of the last 25 years.

2. That it is necessary to obtain from time to time new gas reserves for the Calgary System to maintain the owners thereof in business, as well as to maintain their part of the industrial development within the municipalities it serves, that is dependent on this natural resource as a raw product or for fuel.
3. That the most successful, if not the only way of encouraging development that will carry the cost of prospecting for and developing such reserves, is by paying to the pioneers a price such as will encourage them to take the risks involved.

It may, however, prove to be necessary to take a realistic view of conditions at present existing and it may be that there would be a comparable situation with regard to payment of a "wellhead price" of say 5¢ as to that which may prevent my client from obtaining a Rate of Return which the Board may feel is fair and reasonable. It is suggested that a similar procedure should be adopted in that event as was suggested in connection with the Rate of Return to be allowed to British American Gas Utilities Limited, under those circumstances. That is: that the Board should indicate what, in their opinion, is a fair and reasonable wellhead price for gas, even if it is necessary to modify the order, and temporarily reduce the wellhead price, and rule that for the immediate future it will not be possible to pay the accepted and recognized price but that some lesser amount may be accepted in the meantime. Such a procedure would enable the Board to authorize payment of the accepted

Argument by Mr. Harvie.

- 6897 -

proper value if, as and when the operation of the system is such as to enable full payment to be made.

Until the installation of the Low Pressure Gathering System there was no market for residue gas produced in the B.A. area and, therefore, no revenue therefrom to the Producers from this source.

The British American Gas Utilities Limited has advanced the necessary funds to supply the capital and the costs of operation of the system to date. Reimbursement of such out-of-pocket expenses must necessarily be a first charge on the marketable gas which has now got access to market. The benefits to other parties concerned, as covered earlier in this argument, must be properly assessed and the resultant value then obtained from the consumers of gas. In the event that it is not possible to so increase the amount payable by the consumers to meet the prior charges then there seems to be no alternative but to postpone the full rate of gas value of the wellhead until conditions change, but it is our contention that this is the time to determine that valuation, even if it is not possible to affect payment in full for the immediate future.

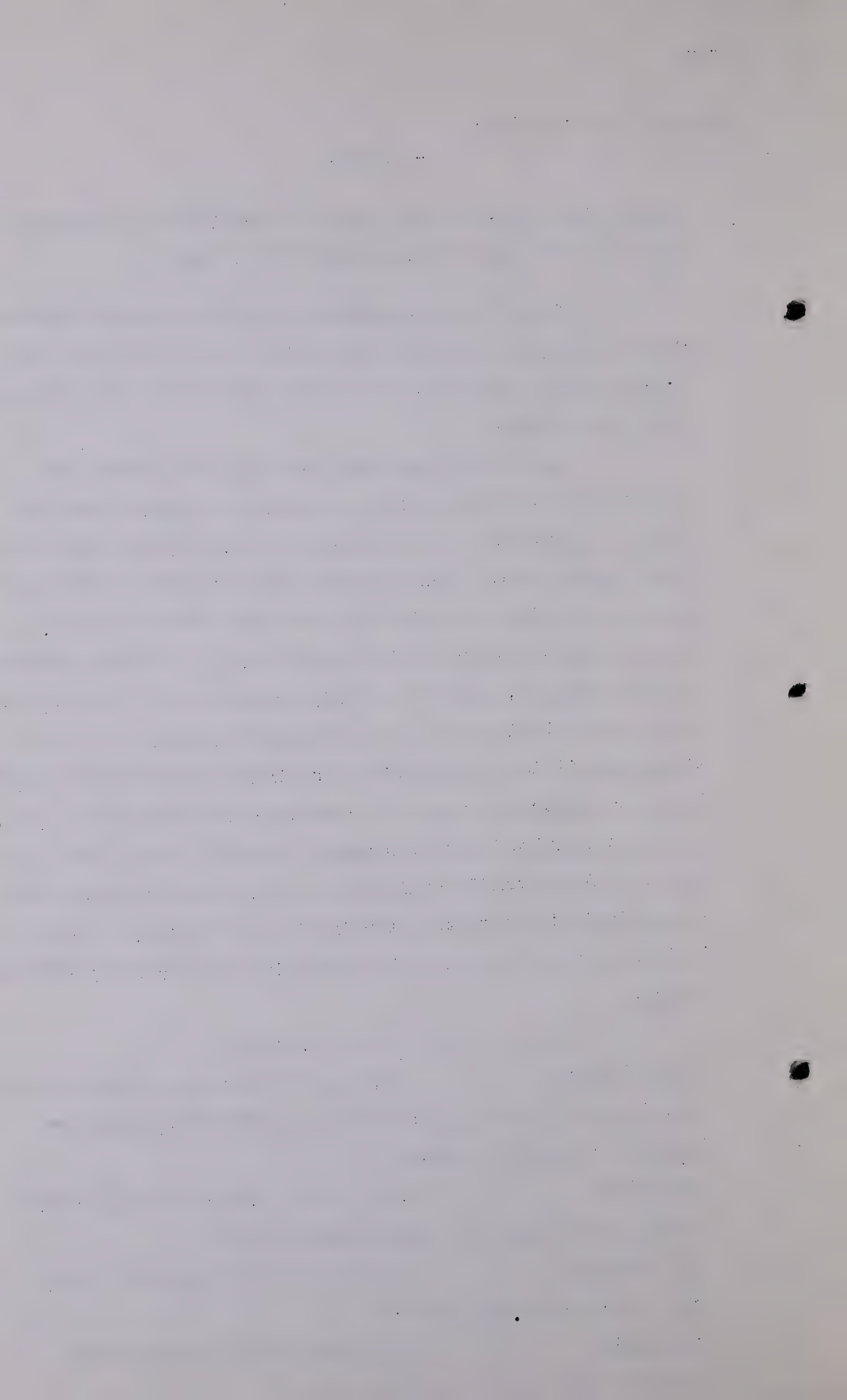
That is all I have to say, Sir.

THE CHAIRMAN: That, in effect, is a suggestion that the wellhead price really should be determined after the ultimate result is known.

MR. HARVIE: No, I think not. I think the well-head prices might be well determined now.

THE CHAIRMAN: I have had that suggestion before, Mr. Harvie, and not from you.

MR. HARVIE: It might possibly save another inquiry like this at a future date.



Argument by Mr. Harvie.

- 6898 -

THE CHAIRMAN: I am just wondering what the Court would say if I did something of that kind.

MR.HARVIE: Well, that is a feature, possibly, and the person affected in the first instance would be the purchaser of the gas from the Madison. They have, as required under Section 60 of the Act, certainly have had a full and complete opportunity to present their case.

MR CHAMBERS: Just before we rose yesterday afternoon you referred to five headings, as I take it, and you have dealt with four and not the fifth, and that is what I am interested in, and that is, "That all Utilities Services in Turner Valley supplying gas to the Calgary market, or the Madison market, should be treated as one unit and paid for accordingly, rather than by individual units."

MR.HARVIE: I think I covered that just in a general statement during my submission.

MR.CHAMBERS: Oh, I see.

MR.HARVIE: Mr. Chairman, I wish to thank you for the courtesies extended to me during this long Hearing, and during my argument.

THE CHAIRMAN: I also wish to thank you for your argument, Mr.Harvie. It gave me some ideas that were certainly not in your original submission, I might say. We will now adjourn to 2 o'clock.

(The Hearing then adjourned and was resumed at 2 P.M.)

.....

Argument by Mr. McDonald.

- 6899 -

2 P.M. SESSION

MR. McDONALD: Mr. Chairman, it is not my purpose in presenting argument on behalf of the producers in Turner Valley, which I represent, to attempt an exhaustive survey of the evidence and repeat much of the comment that has been made in respect to the problems before the Board by the Counsel which have preceded me.

I will endeavour, however, to refer to those parts of the evidence which bring out the points that I think are of importance in the deliberations of the Board when dealing with the interests of the producers. I will endeavour also without repetition to express the conclusions that my clients have reached in regard to the various points raised by Counsel who have already presented argument.

It is obvious, of course, that the interests of the producers in this Hearing is that of the vendor of the commodity which is being handled by the Utility Companies and purchased by the consuming public. Their interest is measured by the net amount of money received by the producers for the sale of the commodity which they produce.

Under Section 72 of the Act, the Board is charged with determining a just and reasonable price to be paid for gas produced by the producers. It is my submission that the Board has the choice of determining the just and reasonable price for gas as and when produced at the well head and then determining the further prices as and when the gas has been gathered, as and when it has been scrubbed, or alternatively, under Subsection (f), the Board can deter-

1942.1.11

1942.1.11

1942.1.11

1942.1.11

1942.1.11

1942.1.11

1942.1.11

1942.1.11

1942.1.11

1942.1.11

1942.1.11

1942.1.11

1942.1.11

1942.1.11

1942.1.11

1942.1.11

1942.1.11

1942.1.11

1942.1.11

1942.1.11

1942.1.11

1942.1.11

1942.1.11

1942.1.11

1942.1.11

1942.1.11

1942.1.11

1942.1.11

1942.1.11

1942.1.11

1942.1.11

1942.1.11

Argument by Mr. McDonald.

- 6900 -

mine the just and reasonable price for gas at the well head and then determine the just and reasonable prices to be paid for the services rendered by the Utilities actually handling the gas in its transit from the well head to the consumer. In this case I mean the Gas Company purchasing at the outlet of the scrubbing plant as the consumer.

Primarily the interests of my clients are served by the determination of the just and reasonable price at the well head, but at the same time the producers are interested in a just and reasonable price to be paid for services of the Utilities because such price fixed for Utilities may, and undoubtedly will have an effect upon the just and reasonable price to be fixed by the Board for gas at the well head, and in addition the producer is interested in the use to which the gas is put and the value thereof to the ultimate consumer.

Now, in my argument it is my purpose to deal with the problems before the Board closely in the following order:

1. The Natural Gas Utilities Act,
2. The Reserves.
3. The approach to the problem of determining the value of gas at the well head.
4. The determination of the costs of the services rendered by the Utilities in transporting the gas, and the allocation of such costs.
5. The just and reasonable price for gas at the well head based on the premises submitted in respect to 1, 2, 3 and 4.

And then I intend to deal with many of the ancillary matters which arise and which peculiarly

Argument by Mr. McDonald.

- 6901 -

affect my clients, namely,

6. Sharing position.
7. Storage.
8. Uniform price, that is the price at the well head.
9. And then the matter of the Royalties, and any other incidentals that might arise.

Now with regard to The Natural Gas
Utilities Act:

Throughout the course of the Hearing reference has been made by the Council and witnesses to the Act implying various motives to the Legislature when enacting the Act. It is not my purpose to argue what the motives of the Legislature were or what the purpose and intention of the Act was. I do think it is in the interests of my clients, however, that I put on record what the apparent intention and purpose of the Act is from a reading of the Act, and what the facts were at the time the Act was passed and what the effect of the steps taken by the Board under the authority of the Act have been, particularly upon the interest of my clients.

The operative part of the Act, if I may use that term, is Part III, comprising Sections 67 to 80 inclusive.

Section 67 contains a provision which has had a very far-reaching effect insofar as the producers are concerned. This Section declares null and void any provision of any contract exclusive of franchises operative within municipalities to the extent that such contracts purport to give the exclusive right to supply natural gas to any one party.

1. The first part of the document is a list of names.

2. The second part is a list of dates.

3. The third part is a list of locations.

4. The fourth part is a list of events.

5. The fifth part is a list of people.

6. The sixth part is a list of organizations.

7. The seventh part is a list of institutions.

8. The eighth part is a list of departments.

9. The ninth part is a list of offices.

10. The tenth part is a list of positions.

11. The eleventh part is a list of titles.

12. The twelfth part is a list of names.

13. The thirteenth part is a list of dates.

14. The fourteenth part is a list of locations.

15. The fifteenth part is a list of events.

16. The sixteenth part is a list of people.

17. The seventeenth part is a list of organizations.

18. The eighteenth part is a list of institutions.

19. The nineteenth part is a list of departments.

20. The twentieth part is a list of offices.

21. The twenty-first part is a list of positions.

22. The twenty-second part is a list of titles.

23. The twenty-third part is a list of names.

24. The twenty-fourth part is a list of dates.

25. The twenty-fifth part is a list of locations.

26. The twenty-sixth part is a list of events.

27. The twenty-seventh part is a list of people.

28. The twenty-eighth part is a list of organizations.

29. The twenty-ninth part is a list of institutions.

30. The thirtieth part is a list of departments.

31. The thirty-first part is a list of offices.

32. The thirty-second part is a list of positions.

33. The thirty-third part is a list of titles.

34. The thirty-fourth part is a list of names.

Argument by Mr. McDonald.

- 6902 -

Subsection 2 gives the Board authority to review all contracts or arrangements in effect in any way relating to natural gas, with power to amend, alter, vary or nullify any or all terms of such contracts, provided that in no case shall an exclusive right to supply gas be conferred on any party.

The above provision together with Section 75 which declares that all pipelines transporting natural gas in any field shall be common purchasers in accordance with the Orders of the Board, together with Section 76 providing that scrubbing plants shall not discriminate between any parties offering gas for treatment, all have the effect of making any market for any producer in any field a market common to the field in which all producers in the field are entitled to share in accordance with the Orders of the Board.

I submit without qualification that the above provisions indicate that the primary purpose of the Act was to make effective the policy of the Government that the producers in any field are entitled to share on an equal basis in any market available to that field.

The evidence discloses that there was in effect prior to the enactment of the Act the contract between the Royalite Company and the Gas Company providing for the exclusive sale by the Royalite Company of gas produced by it to the Gas Company, and the exclusive purchase by the Gas Company as long as the Royalite could supply all gas required by it, from Royalite.

The first effect of the Act was to break the exclusive provisions in this contract and make avail-

Country	1950	1960	1970	1980	1990	2000	2010	2020	2030	2040	2050
Japan	7.0	8.0	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	18.0
Germany	10.0	11.0	12.0	13.0	14.0	14.5	15.0	15.5	15.5	15.5	15.0
France	8.0	9.0	10.0	11.0	11.5	12.0	12.5	12.5	12.5	12.5	12.0
Italy	7.0	8.0	9.0	10.0	10.5	11.0	11.5	11.5	11.5	11.5	11.0
Canada	6.0	7.0	8.0	9.0	9.5	10.0	10.5	10.5	10.5	10.5	10.0
Sweden	5.0	6.0	7.0	8.0	8.5	9.0	9.5	9.5	9.5	9.5	9.0
United States	4.0	5.0	6.0	7.0	7.5	8.0	8.5	8.5	8.5	8.5	8.0
Australia	3.0	4.0	5.0	6.0	6.5	7.0	7.5	7.5	7.5	7.5	7.0

Argument by Mr. McDonald.

- 6903 -

able the Gas Company market to all producers in the Turner Valley field. To the extent that the producers who were excluded from the sale of gas to the Gas Company under the terms of the contract mentioned are now enabled to share a part of that market, there has been a benefit to the producers in the field. To the extent that the Royalite Company has lost the immediate right to sell all of the gas required by the Gas Company to it, the Royalite Company has suffered because of the passing of the Act. It can very well be that Royalite has not lost the sale of the same amount of gas it would sell otherwise, but that the sale of its gas has been extended over a greater number of years.

Now Sections 68 to 71 inclusive provide the machinery whereby gas can be gathered, transported to the market, scrubbed, returned to the formation, for the benefit of the producers and the consumers of gas. It is implied in these sections that the service of transporting and treating natural gas is impressed with the obligation to serve the public in the manner and on the terms prescribed by the Board. The effect of the above Sections, I submit, is to provide the machinery for conveying to market the gas of all producers which the Board should determine should share in the market. The further effect of the Sections is to provide the machinery to conserve by storage in the underground formation such part of the gas necessarily produced in excess of market requirements from time to time for future use by the markets being served by the gas produced in the field. It follows further that because of the authority conferred on the Board in the above Sections, the Board is charged in its discretion to use that authority to effect conservation of natural gas as a wasting natural

Argument by Mr. McDonald.

- 6904 -

resource in the manner and on the terms the Board in its discretion should deem advisable, and for this purpose also the Board is authorized to determine the markets and apportion the quantities to be delivered and sold from time to time. To this extent then, it follows that the Act is a conservation Act, and conservation is the third purpose plainly evident from a reading of the Act, the other two being providing of an open market, and, secondly, providing of facilities for transportation so that there will be no discrimination in marketing.

Now it cannot be denied that by exercising the powers conferred upon it the Board must necessarily interfere with the plans of various parties. Benefits will accrue to some, obligations and direct loss to others.

Now, Section 72 gives the Board the authority to fix and determine the just and reasonable prices to be paid for gas and the services rendered pursuant to the direction of the Board. The only restriction upon the discretion of the Board is that prices fixed shall be just and reasonable. The words, therefore, "just and reasonable" have particular meaning, and I submit the effect to be given to them by the Board is as follows:

Now, Mr. Chairman, Mr. Chambers dealt very ably with the meaning of the words "just and reasonable" and submitted the authorities, and I concur entirely with him in regard to them, but I will put on record the particular meaning that appeals to me in regard to those terms.

THE CHAIRMAN: Are you going to quote me all those volumes in front of you?

MR. McDONALD: No.

THE CHAIRMAN: Or is that your reading stand?

Figure 1. The effect of the concentration of the *Agrobacterium* suspension on the transformation efficiency of *Agrobacterium* strains.

Argument by Mr. McDonald.

- 6905 -

MR. McDONALD: No. That is a reading stand which I am going to use now, and when I become head of the Calgary Bar I will purchase one and put one up here for use of Counsel.

MR. HARRISON: He is resting his case on that, Sir.

MR. McDONALD: Now the just and reasonable price, Mr. Chairman, is that price which is just and proper for the vendor to obtain having regard to his costs, and reasonable for the purchaser to pay having regard to the value to the purchaser of the commodity or service received by the purchaser.

(Go to Page 690⁷).

1. The first part of the report is a summary of the work done during the year.

2. The second part is a list of the work done during the year.

3. The third part is a list of the work done during the year.

4. The fourth part is a list of the work done during the year.

5. The fifth part is a list of the work done during the year.

6. The sixth part is a list of the work done during the year.

7. The seventh part is a list of the work done during the year.

8. The eighth part is a list of the work done during the year.

9. The ninth part is a list of the work done during the year.

10. The tenth part is a list of the work done during the year.

11. The eleventh part is a list of the work done during the year.

12. The twelfth part is a list of the work done during the year.

13. The thirteenth part is a list of the work done during the year.

14. The fourteenth part is a list of the work done during the year.

15. The fifteenth part is a list of the work done during the year.

16. The sixteenth part is a list of the work done during the year.

17. The seventeenth part is a list of the work done during the year.

18. The eighteenth part is a list of the work done during the year.

19. The nineteenth part is a list of the work done during the year.

20. The twentieth part is a list of the work done during the year.

21. The twenty-first part is a list of the work done during the year.

22. The twenty-second part is a list of the work done during the year.

23. The twenty-third part is a list of the work done during the year.

24. The twenty-fourth part is a list of the work done during the year.

25. The twenty-fifth part is a list of the work done during the year.

26. The twenty-sixth part is a list of the work done during the year.

27. The twenty-seventh part is a list of the work done during the year.

28. The twenty-eighth part is a list of the work done during the year.

29. The twenty-ninth part is a list of the work done during the year.

30. The thirtieth part is a list of the work done during the year.

31. The thirty-first part is a list of the work done during the year.

32. The thirty-second part is a list of the work done during the year.

33. The thirty-third part is a list of the work done during the year.

34. The thirty-fourth part is a list of the work done during the year.

Argument by Mr. McDonald.

- 6905 -

MR. McDONALD: No. That is a reading stand which I am going to use now, and when I become head of the Calgary Bar I will purchase one and put one up here for use of Counsel.

MR. HARRISON: He is resting his case on that, Sir.

MR. McDONALD: Now the just and reasonable price, Mr. Chairman, is that price which is just and proper for the vendor to obtain having regard to his costs, and reasonable for the purchaser to pay having regard to the value to the purchaser of the commodity or service received by the purchaser.

(Go to Page 690⁷).

THEORY

The first part of the theory is the definition of the function $f(x)$ which is defined by the equation $f(x) = \frac{1}{x}$ for $x \neq 0$ and $f(0) = 0$. This function is called the reciprocal function.

PROOF

The proof of the theorem is divided into two parts. In the first part, we show that the function $f(x)$ is continuous at every point $x \neq 0$. In the second part, we show that the function $f(x)$ is not continuous at $x = 0$. The first part is proved by using the ϵ - δ definition of continuity. The second part is proved by showing that the limit of $f(x)$ as x approaches 0 does not exist.

Q.E.D.

Argument by Mr. McDonald.

- 6907 -

I do not mean to imply by that that the cost should not also be reasonable.

THE CHAIRMAN: Are you suggesting that "Just and reasonable" is disjunctive?

MR. McDONALD: No, I am suggesting this, that "just" is related to cost and "reasonable" is related to value of the services so they should be read

THE CHAIRMAN: Then why did not they say "Just or Reasonable" as the case may be?

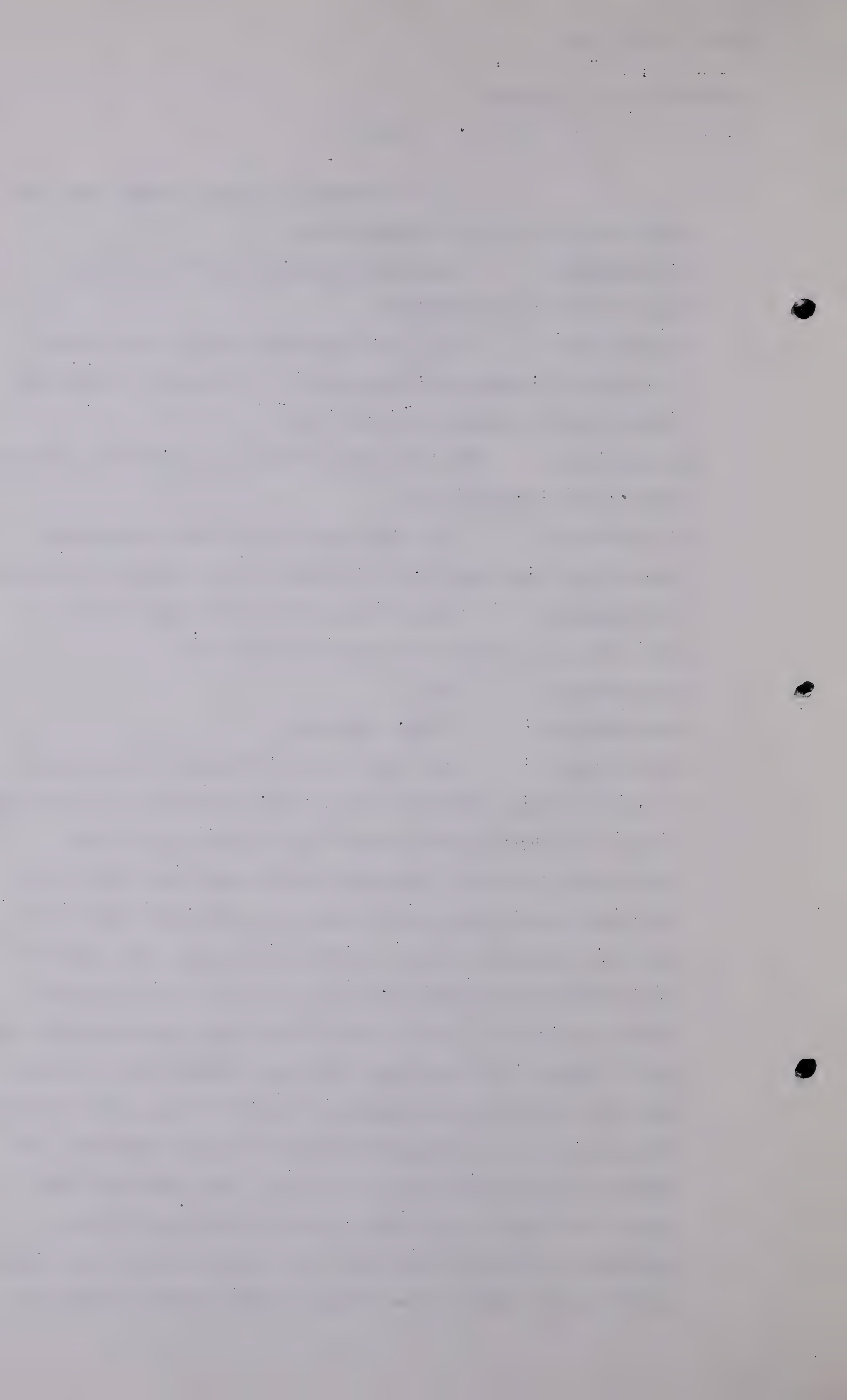
MR. McDONALD: No, they must be just and reasonable because you must also be reasonable in your matter of costs.

THE CHAIRMAN: That is true but aren't you trying to split them as between two classes of people?

MR. McDONALD: Yes.

THE CHAIRMAN: Or two factors.

MR. McDONALD: As I put it, Mr. Chairman, what I have in mind is this, that the cost of the service as it actually is and as ascertainable is the minimum which should be received by the party incurring that cost. That cost, however just be measured with reason and therefore that it is just and reasonable cost. On the other hand, the value of the service to the party who is purchasing is the upper limit which can be put on the, or the upper amount which the party incurring the cost can attain. Between the two lies the area in which the element of profit to the party providing the service, be it either commodity or actual service, and thereby if the price finally fixed is less than what the market will bear, as it were, that is a benefit to the purchaser. If it is more than the actual cost to the party providing the service then there is the element of profit.



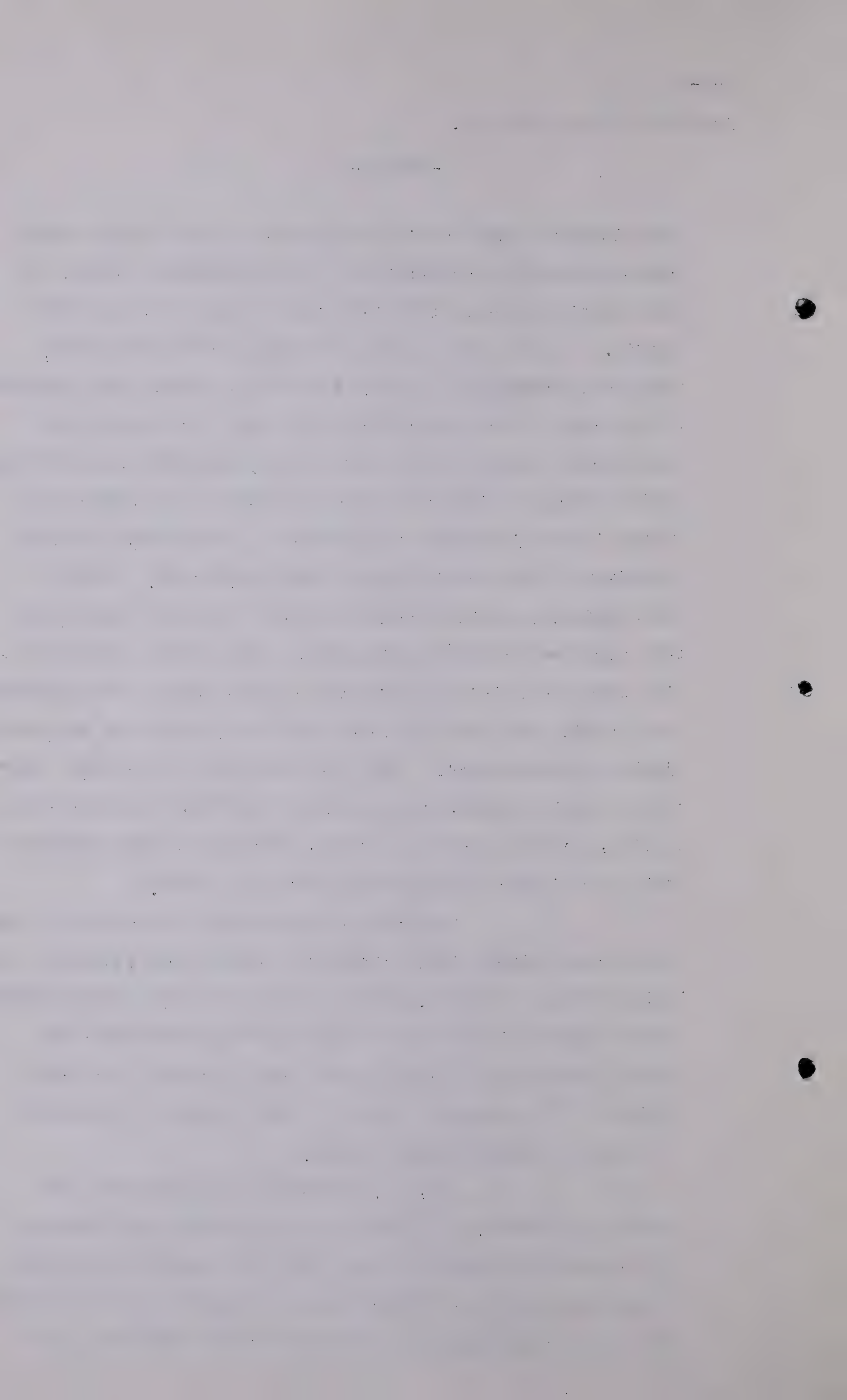
Argument by Mr. McDonald.

- 6908 -

That is why I say that in the matter of the utility whose costs are readily ascertainable the predominant factor is the question of cost to which will be added a reasonable profit. On the other hand in the case of the Producers, where the practical difficulty of obtaining accurate records of the cost of producing gas would seem to indicate that such factor should not be relied upon, then the reasonableness of the charge to the purchaser may become the predominant factor in the judgment of the Board. I particularly draw attention to the provisions of Section 72.1(a). That is the section, you will recollect, Mr. Chairman, which gives the Board authority to look North, East, South and West as if it were, to obtain a basis for valuing gas at the wellhead, but I again add that the Board is circumscribed by the term "just and reasonable". The Board is given the widest discretion as to method, factors to be considered in arriving at a price, but the Board is still restricted to the adoption by it of a just and reasonable basis or method.

Now with regard to the principles of law or natural justice within which the Board must exercise its jurisdiction, I feel Mr. Chambers has referred to practically every aspect of the problem and he has presented to the Board a brief upon which he sets out, I think, the jurisdiction of the Board. It is not my intention to comment further in regard to that aspect.

Now, Mr. Chairman, dealing with the matter of reserves. I feel that the question of reserves is important for this reason, that the reserves or figures which represent the reserves are the measure of a commodity which my clients have for sale and to the Producers as a



Argument by Mr. McDonald.

- 6909 -

group, the reliance which the Board has paid on the estimate which it has received is important. My clients agree with the compilation of the reserves as finally worked out by Dr. Katz and which I think is agreeable to all of the parties. To repeat again, the totals are:

B.A. Area	45.5	billion cubic feet
G.O.R. Area	20	billion cubic feet
Royalite Area reserves	277	billion cubic feet of

a total of 342.5 billion cubic feet as of January 1st, 1945.

Now the question of importance, I submit is, is this total of 342.5 billion cubic feet remaining reserve as of January 1st, 1945 conservative, liberal or is it a reasonable compromise in view of the evidence submitted.

It is my submission that this figure is neither unduly conservative nor unduly liberal. I submit it can be accepted as reasonable for all purposes of this Hearing.

I particularly submit that the amount set out by Dr. Katz is a reasonable basis for the Board to rely upon to determine two essential points affecting the utilities for transporting the gas, namely:

- (a) A basis for establishing value on accrued throughput depreciation having relation to past and future production.
- (b) Determining the risk element in the rate of return insofar as potential production is concerned, affecting return of the investment made by the parties and their earnings thereon.

Argument by Mr. McDonald.

- 6910 -

It is not my intention at this date, Mr. Chairman, to deal with the question of gas resources for the Province other than Turner Valley. I feel that when that problem is presented and there is actually a potential or prospective competition with Turner Valley, then the matter can be dealt with.

I next pass to the

DETERMINATION OF THE VALUE OF GAS AT THE WELL HEAD:

This is what I described a few minutes ago as the approach to the problem.

As mentioned in my opening, the Board is charged with the responsibility of determining the just and reasonable price to be paid for natural gas as and when produced from the earth under the provisions of Section 72, Subsection 1(a) and (b) of the Act. These sections must be read together with Subsection 1(a). Subsection 1(a) and (b) are the subsections that confer the power to fix the price and subsection 1(a) which is a further subsection of section 1 is the one that describes the means or method that the Board may use.

During the course of the Hearing you, Mr. Chairman, have stated that you would very much appreciate if some witness could lay down for you a definite scientific formula upon which the Board could base its determination of a just and reasonable price for gas at the well head. I take it that from these observations you were desirous of obtaining a formula which would not require the application of judgment in the solution of the problem. I quite agree with your implied view that you had not received from any witness a scientific formula which would lead by due process

Argument by Mr. McDonald.

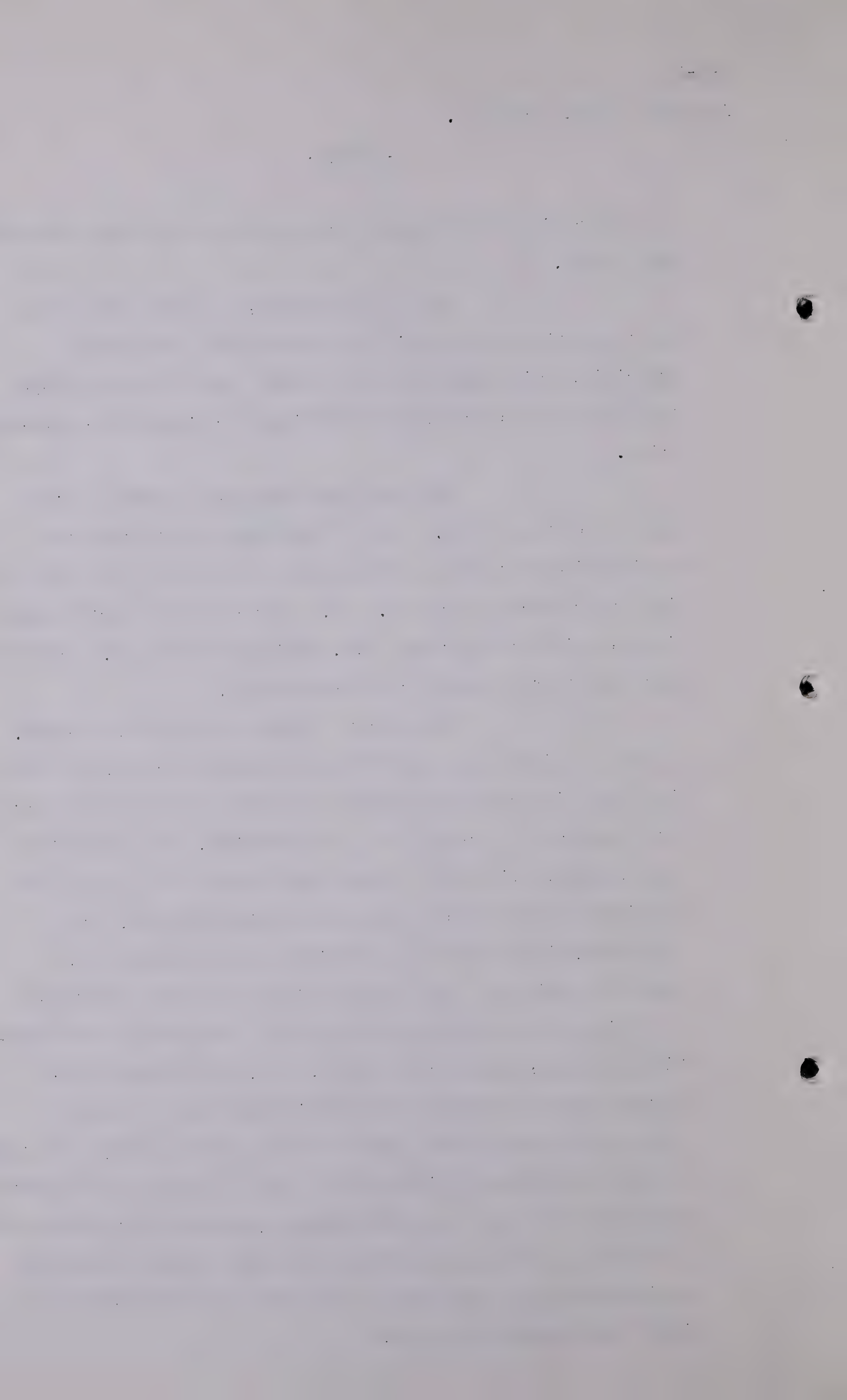
- 6911 -

of application to the determination of the just and reasonable price.

On the other hand, I submit that there has been laid down in evidence before the Board sound principles which may serve as a basis upon which the Board can form sound conclusions resulting in a just and reasonable price.

Now four witnesses were examined with respect to this point. Two of them made submissions in writing with respect to the problem and two of them expressed views on cross-examination. Mr. Zinder and Mr. Davis dealt directly with the problem. Mr. Hamilton and Mr. S.J. Davies expressed views during cross-examination.

In respect to the evidence given by Mr. Zinder I believe I am expressing the views of all who heard him give evidence that he made a sincere endeavour to be of assistance to the Board and to all parties. He showed that when presented with the problem he devoted the best of his energies and ability to the consideration thereof. He undoubtedly is a man well qualified by his education to express an opinion, and fortified by many years experience in public utility work with particular reference to determination of rates, prices and values. Mr. Zinder has widespread contact with many of those interested in similar problems to that we have here, in the United States, and his evidence indicates he did not hesitate to endeavour to obtain any viewpoint which he could express by way of assistance to the Board. It is my submission that Mr. Zinder's evidence and the views he expressed to the Board should be received with the greatest of weight.



Argument by Mr. McDonald.

- 6912 -

I will deal with the evidence of each of the four witnesses as it appears to me from the record and then will summarize what I think the result is and what the Board should follow. Dealing first with Mr. Zinder. Mr. Zinder in his Brief filed and marked Exhibit 126, considers the different approaches to the problem of fixing the price of gas at the well head. He differentiates between natural gas as a commodity and natural gas as a manufactured product, subject to utility regulation in the same manner as electricity and water. (Volume 51, Page 3955).

Mr. Zinder points out that the field price for natural gas must not only be adequate to care for a reasonable proportion of the costs incurred by the producer in respect to the wells from which the gas is presently being produced but sufficiently attractive to encourage development of additional fields. (Volume 51, page 3952.)

That is the point which Mr. Harvie dealt with this morning and I concur in his presentation in respect to that particular point. In other words, gas should have a value which will mean that in the future there will be a continuous search therefor so that as present resources depreciate and are depleted new fields will come into production. Now Mr. Zinder refers to the competitive use of gas as between use for heating and use for manufacturing hydrocarbon products. (Volume 51, Page 3955).

As contrasted to the cost approach which he does not advocate, Mr. Zinder points out that the tendency now is for those studying the subject to determine the price of gas at the well head upon the intrinsic value of the gas, that is, the value of the gas in relation to its use to

T-3-7

Argument by Mr. McDonald.

- 6913 -

society which in turn is measured in terms of its use as a fuel in relation to other fuels, and in terms of its use as a commodity. He continues to point out there are other factors which lead many to consider natural gas as a superior fuel in many respects, which adds to the value of natural gas over and above its comparative value on a strictly fuel basis.

(Go to page 6914)

Argument by Mr. McDonald

- 6914 -

Mr. Zinder refers to the opinion expressed by the Chairman of the Kansas Conservation Commission, and I think it would be well to bring to your attention what Mr. Zinder there said. It is Volume 51, Pages 3960 and 3961: Mr. Zinder stated:

" Since this calculation is not submitted as an actual determination for purposes of recommending a specific wellhead price, but rather as illustrative of the result that might be obtained from a cost approach, Mr. Hamilton's figures are accepted without question. They are accepted without question for the purposes of this calculation. The calculation is based upon the 60 wholly owned gas cap wells of Royalite Oil Company Limited, which were selected by Mr. Hamilton in his statement Part 9. I will take up the discussion of this and other calculations shortly.

In the absence of a cost yardstick it becomes necessary to place a value directly on natural gas at the well head. I would like to insert at this point, as I stated previously there is a growing conviction on the part of many dealing with the problem of the price of natural gas at the well, that such gas has an intrinsic value. For example, in a recent hearing before the Federal Power Commission in connection with its general investigation of the natural gas industry, its docket number G-580, which was held at Kansas City on September 18th, the Honourable Richard B. McEntire, Chairman of the Kansas Commission, testified to the fact that in his opinion and in the opinion of the Kansas Commission, the price

The first part of the report deals with the general situation of the country. It is a very interesting and informative study of the country's development. The author has done a great deal of research and has gathered a wealth of material. The report is well written and is a valuable contribution to the study of the country's development.

The second part of the report deals with the economic situation of the country. It is a very interesting and informative study of the country's economic development. The author has done a great deal of research and has gathered a wealth of material. The report is well written and is a valuable contribution to the study of the country's economic development.

The third part of the report deals with the social situation of the country. It is a very interesting and informative study of the country's social development. The author has done a great deal of research and has gathered a wealth of material. The report is well written and is a valuable contribution to the study of the country's social development.

The fourth part of the report deals with the political situation of the country. It is a very interesting and informative study of the country's political development. The author has done a great deal of research and has gathered a wealth of material. The report is well written and is a valuable contribution to the study of the country's political development.

Argument by Mr. McDonald.

- 6915 -

"of natural gas at the well should be based not upon any cost theories and usual regulatory principles, but rather upon the intrinsic value of the gas. I mention this testimony which was given subsequent to this submission, as it is substantially in accordance with the principles which have been outlined in this submission,'

and he was referring to his own exhibit, Mr. Chairman.

"Since this is the position of a State Commission which has both regulatory and conservation jurisdiction over a substantial portion of the total natural gas reserves of the United States, it is my opinion that it carries more than ordinary weight. In fact Mr. McEntire credits a great deal of the past wasteful use of natural gas to the fact that it previously had not been properly valued and the prices offered and paid for such gas in the field were too low to warrant it being conserved.

When I speak of intrinsic value, I mean the value of the gas in relation to its use to society', and then I have already stated his position.

In his submission Mr. Zinder mentions there has not been in the past a freemarket either as to supply or demand for gas sold in Turner Valley. This argument is based on the record. We have the contract in evidence between the Gas Company and the Royalite Company. An exclusive contract in respect to both parties. From 1921 to 1944 for all practical purposes the only market open for gas in Turner Valley was the exclusive property

The first of these is the fact that the
the second is the fact that the
the third is the fact that the
the fourth is the fact that the
the fifth is the fact that the
the sixth is the fact that the
the seventh is the fact that the
the eighth is the fact that the
the ninth is the fact that the
the tenth is the fact that the

The first of these is the fact that the
the second is the fact that the
the third is the fact that the
the fourth is the fact that the
the fifth is the fact that the
the sixth is the fact that the
the seventh is the fact that the
the eighth is the fact that the
the ninth is the fact that the
the tenth is the fact that the
the eleventh is the fact that the
the twelfth is the fact that the
the thirteenth is the fact that the
the fourteenth is the fact that the
the fifteenth is the fact that the
the sixteenth is the fact that the
the seventeenth is the fact that the
the eighteenth is the fact that the
the nineteenth is the fact that the
the twentieth is the fact that the

The first of these is the fact that the
the second is the fact that the
the third is the fact that the
the fourth is the fact that the
the fifth is the fact that the
the sixth is the fact that the
the seventh is the fact that the
the eighth is the fact that the
the ninth is the fact that the
the tenth is the fact that the
the eleventh is the fact that the
the twelfth is the fact that the
the thirteenth is the fact that the
the fourteenth is the fact that the
the fifteenth is the fact that the
the sixteenth is the fact that the
the seventeenth is the fact that the
the eighteenth is the fact that the
the nineteenth is the fact that the
the twentieth is the fact that the

The first of these is the fact that the
the second is the fact that the
the third is the fact that the
the fourth is the fact that the
the fifth is the fact that the
the sixth is the fact that the
the seventh is the fact that the
the eighth is the fact that the
the ninth is the fact that the
the tenth is the fact that the
the eleventh is the fact that the
the twelfth is the fact that the
the thirteenth is the fact that the
the fourteenth is the fact that the
the fifteenth is the fact that the
the sixteenth is the fact that the
the seventeenth is the fact that the
the eighteenth is the fact that the
the nineteenth is the fact that the
the twentieth is the fact that the
the twenty-first is the fact that the
the twenty-second is the fact that the
the twenty-third is the fact that the
the twenty-fourth is the fact that the
the twenty-fifth is the fact that the
the twenty-sixth is the fact that the
the twenty-seventh is the fact that the
the twenty-eighth is the fact that the
the twenty-ninth is the fact that the
the thirtieth is the fact that the

Argument by Mr. McDonald.

- 6916 -

of the Royalite Company. (Volume 51, page 3963.)

I mention that with regard to the question of the 2 cents being paid by the Royalite Company to other producers for gas delivered to them. Mr. Harvie dealt with that this morning and I agree with his submission there, that that 2 cents may or may not represent the value of that particular gas at that time. The value might have been much more as far as the Royalite Company is concerned, in respect to its own gas used, but we have evidence of that now and therefore I submit we are in a position now to start anew to establish the value on what evidence we have at this Hearing, without regard to what transpired up to 1944 and the passage of this Act.

THE CHAIRMAN: Except I suppose the historical price might be a ground upon which the Board might base some conclusion.

MR. McDONALD: Yes. I am afraid that the Board is entitled to look backward as well as forward and history has a bearing on almost anything which occurs in this life and age but I point out again that the uncertainties arising out of that exclusive contract and the possible advantages to the Royalite Company, incidental entirely to the gas business, if there were any, and I do not know of any, and the value of the exclusive contract itself, all should have some effect on that price and I submit most sincerely that 2 cents represents nothing but a statement to the producer in Turner Valley "If you want to give us your gas we will take it at 2 cents. If you do not give it, we will supply it out of our own resources." It is a "if we take it" proposition and I say there is not a bargaining aspect in the

Argument by Mr. McDonald.

- 6917 -

fixing of that price, even although there is no real value to it and in looking back and looking at it as a historical price, the Board should take that into account. If it was based on open competition, if there was some other market to which that gas could be delivered, then the historical aspect might be of some value but otherwise I submit there is no force to it.

Then Mr. Zinder points out in his Exhibit 126 that it is generally recognized the upper limit of any price is the value of the service or commodity. Thus, the value of the natural gas to the ultimate consumer determines the maximum amount of sales price that can be made available for distribution between the various parties contributing to the service rendered, including the distribution utility which absorbs the largest portion of the total cost of rendering the service. (Volume 51, Page 3966.)

What I mean by "distribution", Mr. Chairman, is that the handling of gas is roughly divided into three categories. There is the field gathering, there is the transmission from the gathering point in the field to the dispersal point of the distribution system which is the third category. In other words, the field lines comprise one class of the company's transmission lines from Turner Valley to Bow Island and to the outskirts of the various cities where they deliver the gas. The distribution system is the lines which run through the streets of the various towns and cities and it may be that the largest portion of the total cost of handling the gas is absorbed in the distribution to the ultimate consumer.

Now Mr. Zinder, in dealing with the matter,

Argument by Mr. McDonald.

- 6918 -

gave some consideration to the question of the cost of producing gas in Turner Valley. He based his statement and his calculations upon calculations made by Mr. Hamilton as to the investment by the Royalite Company in 60 wholly owned gas wells.

Now these statements are set out in Part IX of Exhibit 124, that is an exhibit filed by Mr. Hamilton.

Mr. Zinder used the calculation of investment set out by Mr. Hamilton, namely, the original cost of \$6,300,000.00, for the 60 wells in question, reduced by the application of accrued throughput depreciation formula to \$2,256,820.00.

This evidence is set out, Mr. Chairman, in Volume 51, page 3970.

The result obtained by Mr. Zinder shows that the average cost per m.c.f. of the gas produced by the gas cap wells, namely the 60 wells in question, in 1943, was 11.2 cents, on the basis of an 8% assumed rate of return, the 8% to be earned on the amount of \$2,256,820.00.

Mr. Zinder made further calculations in which he took the fixed price for gas at 5 cents and applied that to the costs information set out by Mr. Hamilton and he finds that the rate of return earned in respect to the 60 wells in 1943, crediting 5 cents as the price of gas, would be 2.11%.

For the purpose of illustrating the value of gas on a cost basis produced from crude wells, Mr. Zinder used the B.T.U. value of the gas and oil as a common denominator and his calculations showed that the average cost of gas per m.c.f. in 1943 on the basis of gas sold from the crude wells was 17.64 cents. Using the same calculations

Argument by Mr. McDonald.

- 6919 -

with regard to the gas cap wells, that is the 60 gas cap wells, the average cost was 36.02 cents. That is found in Volume 51, page 3969.

Now Mr. Zinder's calculation produced very much the same result as achieved by Mr. Hamilton. In Statement WH-64 Mr. Hamilton shows definitely that it takes more than 5 cents per m.c.f. at a production of 1,000,000 m.c.f. per year to get any operating profit whatever from the operation of the 60 wells with which he was dealing, that is before allowance for any return on the investment. In accordance with Mr. Hamilton's repeated statements as to fundamental principles the producer should have something in addition to costs in order to warrant his continuing production. This would indicate something in excess of 5 cents at that level of production, namely 1,000,000 m.c.f. a year, or a price in excess of 3 cents at a production level of 2,000,000 m.c.f. per year should be obtained. In other words, on the two calculations as to costs which have been submitted in evidence, there is an indication of real value of gas. Mr. Zinder's calculation, which I submit largely carries through Mr. Hamilton's ascertainment of the cost, that shows that this minimum price for the Gas Cap well is 11.2 cents per m.c.f. on a basis of an 8% return.

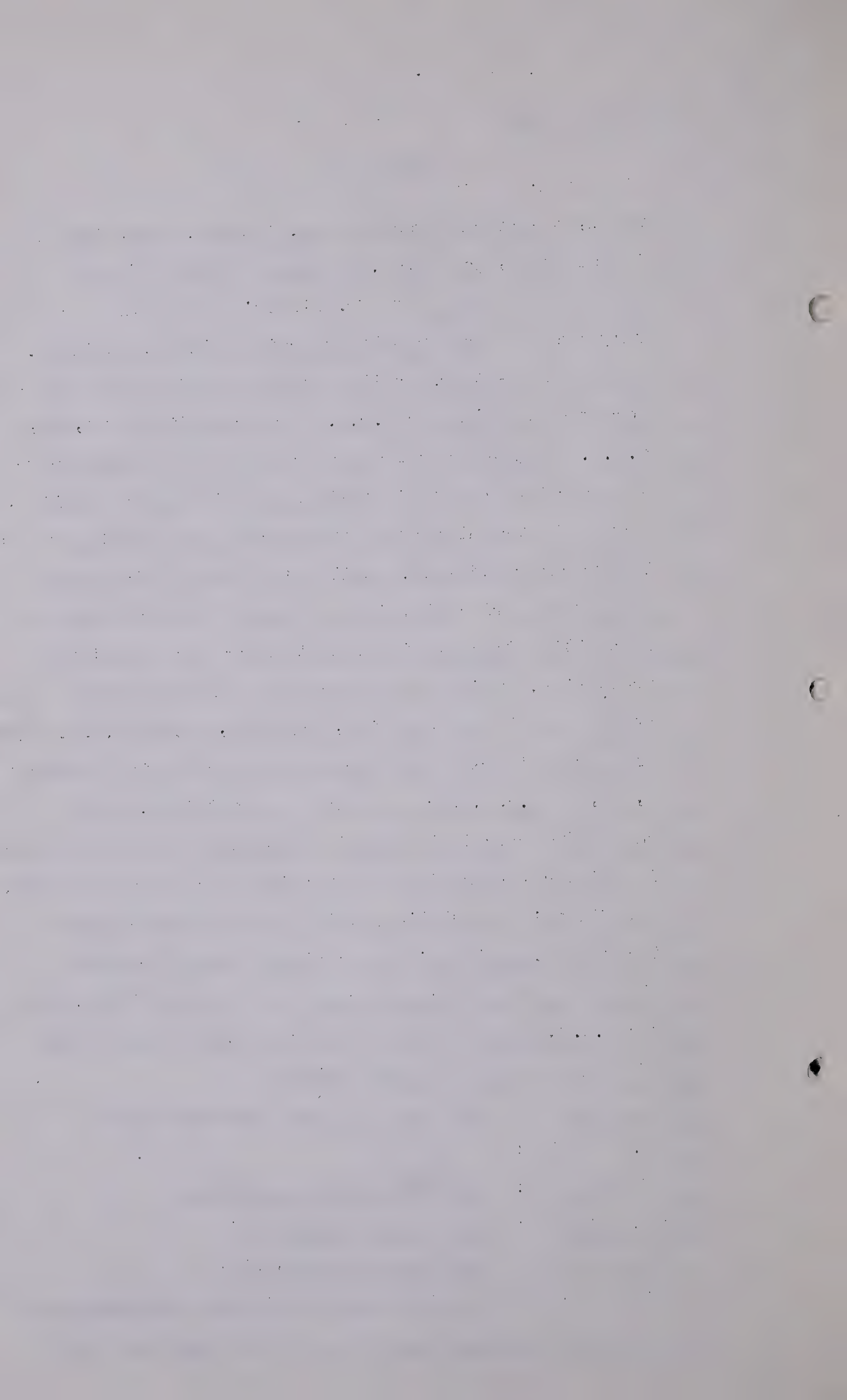
THE CHAIRMAN: And that is after crediting naphtha, was it?

MR. McDONALD: after
Yes, /crediting everything.

THE CHAIRMAN: And natural gasoline?

MR. McDONALD: And natural gasoline.

I might state, sir, that the memorandum which precedes Schedule 1(a) of Exhibit 126 sets out fully



Argument by Mr. McDonald.

- 6920 -

every credit, yes, the credit of crude oil is taken into account. The gasoline is taken into account, before arriving at the value of the gas on the cost basis and royalties and 8% is assumed as the proper rate of return. Allowance is made for income taxes and deductions for royalties from the revenue obtained.

Now, Mr. Zinder, I might refer, Mr. Chairman, to pages 3974 and 3976 of Volume 51, in which Mr. Zinder discusses in detail his calculations in regard to the production of gas from the crude well which shows 13.86 cents per m.c.f. before a rate of return, was earned as being the cost.

(Go to page 6921)

1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100. 101. 102. 103. 104. 105. 106. 107. 108. 109. 110. 111. 112. 113. 114. 115. 116. 117. 118. 119. 120. 121. 122. 123. 124. 125. 126. 127. 128. 129. 130. 131. 132. 133. 134. 135. 136. 137. 138. 139. 140. 141. 142. 143. 144. 145. 146. 147. 148. 149. 150. 151. 152. 153. 154. 155. 156. 157. 158. 159. 160. 161. 162. 163. 164. 165. 166. 167. 168. 169. 170. 171. 172. 173. 174. 175. 176. 177. 178. 179. 180. 181. 182. 183. 184. 185. 186. 187. 188. 189. 190. 191. 192. 193. 194. 195. 196. 197. 198. 199. 200. 201. 202. 203. 204. 205. 206. 207. 208. 209. 210. 211. 212. 213. 214. 215. 216. 217. 218. 219. 220. 221. 222. 223. 224. 225. 226. 227. 228. 229. 230. 231. 232. 233. 234. 235. 236. 237. 238. 239. 240. 241. 242. 243. 244. 245. 246. 247. 248. 249. 250. 251. 252. 253. 254. 255. 256. 257. 258. 259. 260. 261. 262. 263. 264. 265. 266. 267. 268. 269. 270. 271. 272. 273. 274. 275. 276. 277. 278. 279. 280. 281. 282. 283. 284. 285. 286. 287. 288. 289. 290. 291. 292. 293. 294. 295. 296. 297. 298. 299. 300. 301. 302. 303. 304. 305. 306. 307. 308. 309. 310. 311. 312. 313. 314. 315. 316. 317. 318. 319. 320. 321. 322. 323. 324. 325. 326. 327. 328. 329. 330. 331. 332. 333. 334. 335. 336. 337. 338. 339. 340. 341. 342. 343. 344. 345. 346. 347. 348. 349. 350. 351. 352. 353. 354. 355. 356. 357. 358. 359. 360. 361. 362. 363. 364. 365. 366. 367. 368. 369. 370. 371. 372. 373. 374. 375. 376. 377. 378. 379. 380. 381. 382. 383. 384. 385. 386. 387. 388. 389. 390. 391. 392. 393. 394. 395. 396. 397. 398. 399. 400. 401. 402. 403. 404. 405. 406. 407. 408. 409. 410. 411. 412. 413. 414. 415. 416. 417. 418. 419. 420. 421. 422. 423. 424. 425. 426. 427. 428. 429. 430. 431. 432. 433. 434. 435. 436. 437. 438. 439. 440. 441. 442. 443. 444. 445. 446. 447. 448. 449. 450. 451. 452. 453. 454. 455. 456. 457. 458. 459. 460. 461. 462. 463. 464. 465. 466. 467. 468. 469. 470. 471. 472. 473. 474. 475. 476. 477. 478. 479. 480. 481. 482. 483. 484. 485. 486. 487. 488. 489. 490. 491. 492. 493. 494. 495. 496. 497. 498. 499. 500. 501. 502. 503. 504. 505. 506. 507. 508. 509. 510. 511. 512. 513. 514. 515. 516. 517. 518. 519. 520. 521. 522. 523. 524. 525. 526. 527. 528. 529. 530. 531. 532. 533. 534. 535. 536. 537. 538. 539. 540. 541. 542. 543. 544. 545. 546. 547. 548. 549. 550. 551. 552. 553. 554. 555. 556. 557. 558. 559. 560. 561. 562. 563. 564. 565. 566. 567. 568. 569. 570. 571. 572. 573. 574. 575. 576. 577. 578. 579. 580. 581. 582. 583. 584. 585. 586. 587. 588. 589. 590. 591. 592. 593. 594. 595. 596. 597. 598. 599. 600. 601. 602. 603. 604. 605. 606. 607. 608. 609. 610. 611. 612. 613. 614. 615. 616. 617. 618. 619. 620. 621. 622. 623. 624. 625. 626. 627. 628. 629. 630. 631. 632. 633. 634. 635. 636. 637. 638. 639. 640. 641. 642. 643. 644. 645. 646. 647. 648. 649. 650. 651. 652. 653. 654. 655. 656. 657. 658. 659. 660. 661. 662. 663. 664. 665. 666. 667. 668. 669. 670. 671. 672. 673. 674. 675. 676. 677. 678. 679. 680. 681. 682. 683. 684. 685. 686. 687. 688. 689. 690. 691. 692. 693. 694. 695. 696. 697. 698. 699. 700. 701. 702. 703. 704. 705. 706. 707. 708. 709. 710. 711. 712. 713. 714. 715. 716. 717. 718. 719. 720. 721. 722. 723. 724. 725. 726. 727. 728. 729. 730. 731. 732. 733. 734. 735. 736. 737. 738. 739. 740. 741. 742. 743. 744. 745. 746. 747. 748. 749. 750. 751. 752. 753. 754. 755. 756. 757. 758. 759. 760. 761. 762. 763. 764. 765. 766. 767. 768. 769. 770. 771. 772. 773. 774. 775. 776. 777. 778. 779. 780. 781. 782. 783. 784. 785. 786. 787. 788. 789. 790. 791. 792. 793. 794. 795. 796. 797. 798. 799. 800. 801. 802. 803. 804. 805. 806. 807. 808. 809. 810. 811. 812. 813. 814. 815. 816. 817. 818. 819. 820. 821. 822. 823. 824. 825. 826. 827. 828. 829. 830. 831. 832. 833. 834. 835. 836. 837. 838. 839. 840. 84

Journal of Management Studies, 19(1), 67-80.

M-3-1 - 2.45 P.M.

Argument by Mr. McDonald.

- 6921 -

Now in his approach to the problem, having dealt with the cost aspect, which as I stated before, Mr. Zinder does not advocate but which I submit is of importance to the Board as indicating that in dealing with this matter the Board should not go or not set a price which will unduly affect or compel the producer to actually produce gas at a price which has no relation whatever to the cost.

THE CHAIRMAN: Well if I do that Mr. McDonald, then the price which Mr. Hamilton gave would have to be the price I would have to adopt would it not ?

MR. McDONALD: No, Mr. Chairman, no. I am extending Mr. Hamilton's cost prices, actually applying them on a proper calculation and giving a reasonable rate of return on investment and get as high as eleven cents. Now I can assure you, Mr. Chairman, I am not going to ask the Board to set eleven cents for the gas but I do think that is something that should be borne in mind in arriving at the price on the basis that I am going to elaborate on now to a greater extent. I do not think it should be disregarded.

THE CHAIRMAN: Just what deduction should I make from the eleven cents and on what basis ?

MR. FENERTY: Yes, why not eleven cents ?

MR. McDONALD: Because it may be the price which may be actually obtained for the commodity when it is finally disposed of, maybe such that after deducting the cost of transporting the commodity to the ultimate consumer there is not enough money to pay the eleven cents, but that might be where the reasonable side of my argument, under "just and reasonable" comes in. In other words there is a ceiling.

THE CHAIRMAN: And that ceiling is, what the traffic will

Argument by Mr. McDonald.

- 6922 -

bear, is it not ?

MR. McDONALD: Yes, that is a rough and ready statement, but it is what it is worth to the consumer. It might be termed what the traffic will bear, but should be what the consumer will reasonably pay.

THE CHAIRMAN: How shall I determine what the traffic will bear ?

MR. McDONALD: Well that is what I hope to outline to you sir as we go on. That is the problem.

Now having disposed of the cost phase Mr. Zinder then comes to the problem which you have just mentioned, Mr. Chairman and he has gathered together in his Exhibit some information which I believe, as he set out in his evidence, may serve as guide posts to the Board in arriving at a solution or a price.

In Exhibit 126 Mr. Zinder sets out in the schedules attached thereto general information in respect to the trends of the value of gas in the United States. I do not pretend that the trends indicated have been or will be reflected in Alberta, but they indicate generally an increasing value in the United States which well may follow in Canada.

If you will recollect, sir, in his Schedule No. 2, Mr. Zinder set out the average value of natural gas at the wells in the United States as reported by the United States Bureau of Mines which show the high in 1921-2, 11.1¢ decreasing to 4.5¢ in 1940 and then an increase for 1941-2-3 to 5.2¢ and he has set out graphically the same information.

THE CHAIRMAN: Was that for scrubbed gas ?

MR. McDONALD: No average value of natural gas at the well. No, that statement, I submit, Mr. Chairman is an over-all

...

...

...

...

...

...

...

...

...

...

...

...

...

...

...

...

...

...

...

...

...

...

...

...

...

...

...

...

...

...

...

...

...

...

...

Argument by Mr. McDonald.

- 6923 -

statement of a statistical nature set up by the United States Bureau of Mines from records received from every type of gas well including scrubbed gas and including wet gas and all depending upon the particular type of sale made by the individual type of company reporting, but because it is such a composite figure I submit it is a fair trend and can be looked at from a trend viewpoint.

In Schedule 3 Mr. Zinder deals with field prices, which raises the point you have just mentioned. Again I do not pretend these prices are applicable here, but they do reflect a real well head value to gas in other areas.

Their value simply is that gas has a substantial value, in other words in other areas and other parts of the country. Now Mr. Zinder was closely examined in regard to this Schedule and comment was made by Mr. R. E. Davis in Exhibit #148.

Mr. Davis seems to make much of the comparative price of natural gas in the field in the United States with particular reference to three companies -- Tennessee Gas and Transmission Company, United Gas Pipe Line Company, and Michigan-Wisconsin Pipe Line Company, I might point out that the latter Company was not then and is not now even an operating company. Mr. Zinder, on the other hand, included a much larger number of companies making no effort to select any particular company but to get the detailed information for as many of the larger pipeline companies in the States as was publicly available. Cross-examination of Mr. Zinder by Mr. Steer brought out the fact that in a number of instances the proportion of the gas purchased at the well head represented by the figures in Mr. Zinder's exhibit was substantially in excess of 50% and just to make it clear I will read that again

Argument by Mr. McDonald.

- 6924 -

now and that is well head contrasted to gas gathering systems.

Mr. Davis did not refer to these instances and this evidence remains uncontradicted. It is necessary to place this evidence in its proper perspective.

The point I make, Mr. Chairman, is this, that Mr. Davis worked out and unjustifiably so a number of prices which were definitely gathered prices, but Mr. Zinder in putting in his evidence did actually have and put in detail a number of well head prices prior to gathering. These points were not dealt with by Mr. Davis in proportion to a certain extent substantially in excess of fifty items mentioned. Mr. Zinder's well head prices represent well head prices. I mention that in order to place his evidence in this respect in its proper perspective Mr. Zinder's evidence is just another guide post along the way and the record indicates as many examples of 5¢ and 5¢ and more prices at the well head in the States as there are lower prices. In other words the average price is higher than 5¢ in as many examples as it is less.

Incidentally it might be pointed out at this time, as shown by the record, that substantially all of the gas purchased by the Tennessee Company at 5¢ per m.c.f. was originally flared and wasted gas. Here we have a case of wasted product over night assuming a value of 5¢ per m.c.f. and the Board might well take judicial notice of the fact that today the Texas Railroad Commission, which regulates natural gas in Texas, is directing about a 10¢ field price in the near future and this also for gas which is now being flared as well as for gas from gas fields.

Just dealing with this point as we have it before us. I asked Mr. Davis how far the pipelines purchasing

Argument by Mr. McDonald.

- 6925 -

the gas transported the gas to the ultimate consumer, and he mentioned the Tennessee Gas and Transmission Line 1,250 miles long. There is a good load factor; delivers something in excess of 200 million cu. ft. a day. The Michigan Line about 1,300 miles long has a good load factor. The United Company is also very long and has a good industrial load factor. It appears to me that it is logical therefore that the gas sold in the field for transportation to such distances must necessarily be at a lower price than gas transported 40 to 100 miles as in this particular area.

Now in his Exhibit 126, Schedule 4, Mr. Zinder deals with values of gas in depleted and declining fields. It shows I submit what people will pay for gas once they have formed a habit of buying it and have had it for many years. Then as to the prices paid in the heart of gas fields. They vary from 12¢ at the wells in West Virginia to 23¢ at the wells in Pennsylvania. Those are the oldest gas wells I believe in the United States and even though the source of supply is close to the market, the money paid or the price is substantial.

Now Schedule 5 is informative. It is the schedule in which Mr. Zinder set out a comparison between the retail sales price of gas in cities of 50,000 population or over in which some four cities had a sales price which was in excess of the current Calgary rate. Now that is informative because it establishes this, that the three cities which have a lower rate are cities that are situated right in the heart of the gas fields. They were all referred to by Mr. Davis on his last appearance in the stand, namely Charleston, Huntington, Amarillo and Charleston had two rates.

• $\int_0^1 \frac{1}{x} dx = \lim_{\epsilon \rightarrow 0^+} \int_{\epsilon}^1 \frac{1}{x} dx = \lim_{\epsilon \rightarrow 0^+} \left[\ln x \right]_{\epsilon}^1 = \lim_{\epsilon \rightarrow 0^+} (0 - \ln \epsilon) = \lim_{\epsilon \rightarrow 0^+} (-\ln \epsilon) = \infty$

1. *Chlorophyll a* and *Chlorophyll b* were determined by the method of Arar and Collins (1971).

M-3-6

Argument by Mr. McDonald.

- 6926 -

Now the fact that Calgary prices, 40 miles from the field, compare with prices in cities of similar size right in the gas fields indicate that regardless of the abundant supply of gas a substantial price is set upon it even taking into account load factor and lack of heating demand.

(Go to Page 6927)

... ..

...

... ..

... ..

...

Argument by Mr. McDonald.

- 6927 -

I submit, first, that in Amarillo and Charleston, right in the middle of the field, the gas is transported a very few feet, and there is no transmission cost to it, and they are prepared to pay the amount or approximately the same amount as at Calgary, that there must be a residual amount of money left in the hands of the producer and that gives to that a real value, and that is what I submit is indicated by Schedule 5.

Now, I have dealt with Exhibit 126.

THE CHAIRMAN: That is your own conclusion, Mr. McDonald, what conclusions do you draw from that evidence, Mr. McDonald, apart from the fact that gas is of intrinsic value?

MR. McDONALD: Do you mean from the schedules which I have just referred to?

THE CHAIRMAN: Yes, supposing you were in my position, what conclusion would you draw from those figures?

MR. McDONALD: I would draw this conclusion, first, that the gas is not to be given away. It has a value.

THE CHAIRMAN: Well that is agreed.

MR. McDONALD: Yes.

THE CHAIRMAN: That is agreed.

MR. McDONALD: And that even if the gas has been sold where there is an abundance of gas, there is an excess of production over market demands, a substantial value is still given to the gas. It is not treated as a waste product, and that is what I referred to in the price fixed at Amarillo, Charleston and Huntingdon, all prices which are fixed by the Board v.....

THE CHAIRMAN: Yes, but I wanted you to tell me, Mr. McDonald, from what branch of this portion of this case,

1. Introduction

2. Methodology

The first part of the study, the introduction, outlines the purpose and scope of the research. It discusses the importance of understanding the relationship between the variables under investigation and the need for a systematic approach to data collection and analysis. The methodology section describes the research design, including the selection of participants, the instruments used for data collection, and the statistical methods employed for data analysis. The results section presents the findings of the study, which show a significant positive correlation between the variables. The discussion section interprets these findings in the context of existing literature and suggests implications for future research.

3. Results and Discussion

The results of the study indicate a strong positive relationship between the variables. This finding is consistent with previous research, which has also shown a significant correlation between these variables. The discussion section explores the reasons for this relationship and its implications for practice and theory.

The study was conducted using a quantitative research design, which allowed for the collection of numerical data and the use of statistical analysis. The participants were selected through a random sampling method to ensure the representativeness of the sample. The data was collected using a standardized questionnaire, which was validated for reliability and validity. The statistical analysis was performed using SPSS software, which provided the necessary statistical tests to determine the significance of the findings. The results of the study are presented in the form of tables and graphs, which clearly illustrate the relationship between the variables. The discussion section provides a detailed interpretation of these results, highlighting the strengths and limitations of the study and suggesting directions for future research. The conclusion summarizes the main findings of the study and emphasizes the importance of the research in the field.

Argument by Mr. McDonald.

- 6928 -

what deduction do you personally draw as to the proper well head price?

MR. McDONALD:

To be fixed in Calgary?

THE CHAIRMAN:

As a deduction from that evidence.

MR. McDONALD:

To be fixed in Calgary?

THE CHAIRMAN:

Yes.

MR. McDONALD:

In town?

THE CHAIRMAN:

Yes. I suppose that is very unfair, Mr. McDonald, but that is what you are asking me to do.

MR. McDONALD:

I have a ready answer, but I want to make sure that I have not overlooked anything.

THE CHAIRMAN:

And then I am going to ask you how you arrive at your answer too.

MR. McDONALD:

That is the problem too. I think that we can sum up these schedules, starting with 2, starting with Schedule 2, regarding the average value of the natural gas at the wells, and the field prices comprised in Schedule 3, the field prices in Schedule 4, and the city prices as set out in Schedule 5, as indicating that there is a value to the gas in these other areas, and that that value is fixed in relation to the demand. All of the gas which is referred to in those Schedules is gas that is actually sold, and even applying all the costs of transmission to it, the prices in Schedules 2, 3 and 4 leave in the neighborhood of an average of 5 cents in United States money to the producers.

Now, in some respects those are gathered costs, the gathered costs are still in the 5 cents, but on the general average that indicates the 5 cents is the field price for this gas in the United States. There is a very large area covered by the companies referred to in those schedules, and I think for that reason it can be taken as indicating a

Argument by Mr. McDonald.

- 6929 -

general value.

Now, how to apply that to the Calgary prices, for instance, and the prices in the Turner Valley.....

THE CHAIRMAN: Now you are getting to what I want.

MR. McDONALD: Mr. Zinder mentioned one feature in his evidence, and that was the question of pipe line facilities from the fields mentioned reaching an area in which there was a possible market for gas from this area or this field, using as an illustration Winnipeg served say from an extension of the lines running from Minneapolis from the fields mentioned here, and the competitive points for gas going West from Alberta either from Turner Valley or fields competitive to it. That was one aspect.

Now, I do not pretend that there is any other real connection between the situation there and the Turner Valley, but they are put in, as I mentioned throughout to indicate the trend of the value given by Commissions who have much the same problems to deal with as you here. In other words, Mr. Zinder says they may be guideposts, they may not be very tall ones, nor well lit, but they do indicate something.

THE CHAIRMAN: I suppose it would be possible to get copies of the judgments of those Boards that fixed those prices?

MR. McDONALD: I suppose. Mr. Zinder's evidence does set out that he obtained the material upon which he made up his schedules from the reports made to the Federal Power Commission.

Now, with regard to the Amarillo, Charleston and Huntingdon fields, for instance, I think it

Argument by Mr. McDonald.

- 6930 -

could be found in the Public Utilities Reports. Now as to the other companies, that might be done, if you would like me to make a search for them, I will see what I can do with regard to it.

THE CHAIRMAN: I would like very much if you would.

MR. HARVIE: It might be of interest, if I might interject, Mr. Chairman, I have been informed that there is no power in the States that fixes field prices as such.

MR. McDONALD: I am not contending that field prices are set.

MR. HARVIE: And those figures that are taken by the Federal Power Commission, it is in connection with interstate transportation.

THE CHAIRMAN: In connection with interstate transportation?

MR. HARVIE: And your State Boards do not attempt to fix field prices at the well head.

THE CHAIRMAN: That is a matter of agreement.

MR. HARVIE: I beg your pardon?

THE CHAIRMAN: That is a matter of agreement.

MR. HARVIE: Yes.

THE CHAIRMAN: And then there is the pure public utility practice.

MR. McDONALD: I think the situation in the United States is very similar to what it has been up to date, that is, that the Royalite contract with the Gas Company fixed the price upon which the public utility commission started to build the ultimate price at Calgary to the consumer. But I am going to point out that carrying that back, there is no commission, I submit in the United States that goes behind that price, and says there is no value to the gas, and that the person supplying that gas is not entitled to a reasonable return from

Argument by Mr. McDonald.

- 6931 -

it. That appeals to me very much in regard to those Huntingdon, Charleston and Amarillo fields. There we have tremendous quantities of gas going to waste, and sold at very low prices, and still the residents of those towns pay substantial prices.

THE CHAIRMAN: Perhaps the people in Calgary have been too well treated in the past.

MR. McDONALD: If I had not adopted the attitude that past days are past days, I would have argued that very vehemently. They have been badly brought up in giving the producer a fair return for that the producer has invested in the gas wells.

MR. STEER: In his gas wells?

MR. McDONALD: In his oil and gas wells. Now, I was going to point out, Mr. Chairman, one of the most useful statements I have heard made in the whole Hearing, is that statement made by Mr. Hill at page 1781, in the volume appearing in the record, in which he stated that the value of service to the ultimate consumer fixed the ceiling of prices which can be charged, or the composite of the prices that could be charged. And Mr. Zinder affirmed that statement on page 4044. Mr. Zinder agreed to that statement that if the return on the investment should give rise to a much greater charge than the cost of ^{the} service, such excess proportion of the return could not be expected by the investing company, or the utility company. That is a point mentioned by Mr. Harvie this morning, in which he suggested the matter of levelling off. I mention that just to indicate that there is evidence on the record in regard to it.

Now, Mr. Zinder was examined with regard to effect of regulation on the value of gas. He

Argument by Mr. McDonald.

- 6932 -

pointed out at Page 4069 that restriction by regulation can add value to the gas, and at the same time it is quite impossible a statutory market created by the same regulations may also add value to the gas by extending the market. In other words, this gas having come under regulation in Turner Valley, and the Legislature definitely authorizing this Board to fix a price, I think it must be taken as mandatory that the price is to be fixed, there must be something of some value given to the gas. The gas that may not have been worth anything prior to the regulation, by the mere fact of the regulation, and by the mere fact that the market has been found, has obtained a value.

THE CHAIRMAN: But Mr. Chambers tells me that I am not at liberty to say, having given the matter the best consideration^{of}/which I am capable, and I fix the price at X cents, he says I cannot do that, and he quotes the House of Lords as an authority for it, no, the Privy Council. Now, do you agree with him I cannot do that? I want you to tell me some even quasi scientific methods whereby I can fix the wellhead price.

(Go to page 6933).

... ..

...

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

...

...

T-4-1 3.15 P.M.

Argument by Mr. McDonald.

- 6933 -

MR. McDONALD: Well that is what I think.

MR. HARVIE: Go 50-50 in the retail price between the Gas Company and the Producer.

MR. McDONALD: There is, I think, some way to fix this price, that is to give a value to the gas in the hands of the ultimate consumer and work back from there.

THE CHAIRMAN: I think my problem is to find a way to get around Mr. Chambers' dictum. All right, Mr. McDonald.

MR. McDONALD: With respect to Mr. Zinder, I may summarize his evidence as follows, and this is a statement he made to Mr. Blanchard at pages 4228 and 4229, which I submit is at least a guide of some sort to the Board and establishes some principles on which I think the Board can rely. I think first the producer of a useful commodity for which there is a demand is entitled to a fair price. Now there is a demand and there is something that is of use to the person who receives it, surely something should be paid to the man who provides it. In this case we have gas. We have somebody at one end who produces it and somebody at the other end who uses it. Now some price must be fixed. Now certainly when under regulation so long as the burner tip price of gas is lower than other types of fuel presently being furnished, the price of gas cannot be considered to be unfair, providing such price does not result in undue profit to the primary producer in relation to his investment. I submit that is a just and reasonable price. That under regulation the well head price must not be such a figure that the price to the ultimate consumer will result in an impairment of the revenue and required to return the

Argument by Mr. McDonald.

- 6934 -

investment of the operators in the field as well as the distributors, together with a fair rate of return on their investment. That is a safeguard for the utility companies handling the gas. Then Mr. Zinder returns to the point mentioned by Mr. Hill earlier in the hearing that there should be a relationship with revenue to cost of service and since the cost of service cannot be determined to the producer, there must be the value of the service to which other costs are added. I think that sums up Mr. Zinder's evidence in regard to the approach to the problem.

Dealing with this question of waste product, replying to Mr. Chambers at page 4261, Mr. Zinder again takes the view that regulation places a value upon gas in Turner Valley but holds that the fact it has been used for producing oil does not affect its value. (Volume 54.) Waste is failure to make use of the qualities the gas has and he concurs that flaring is certainly wasting it. If it costs more to save the gas than it is worth, he would not recommend the expenditure unless public policy requires it. Then the problem is who is to pay for it. In controlling waste the Board should insure, as far as possible, that the parties who put up the money to perform the service get reasonable compensation for it. Mr. Zinder agrees too with the Board that he knows of no scientific or almost scientific basis on which to fix a well head price. He believes the price should be an arbitrary one, defining arbitrary as a price fixed on a formed judgment tested insofar as possible by reference to as many guideposts as can possibly be found.

Now I think, Mr. Chairman, as I mentioned in my opening in regard to Mr. Zinder's evidence, that he has done his best to put before you his view and he has given,

Argument by Mr. McDonald.

- 6935 -

I submit, some points upon which the Board can at least start to unravel the problem.

Then we come to Mr. R. E. Davis who submitted Exhibit 148. Now with regard to the evidence of R. E. Davis, I am somewhat puzzled. Analyzing his evidence it appears that Mr. Davis agrees with other witnesses first that the utility approach to the value of gas is not practical. And secondly, that natural gas has a value at the well and thirdly, that the producer can expect to get what his gas can be sold for in the consuming market less the cost of getting it there.

Now that is what I submit is a fair summary of the position taken by Mr. R. E. Davis. Now in spite of these three principles, Mr. Davis winds up with the surprise recommendation that the price remain as it is, namely: 2 cents per m.c.f. at the well and a $7\frac{3}{4}$ cents at the outlet of the scrubbing plant. In giving his reasons for this conclusion, he states that he does so "because it is an existing figure." Now I submit, Mr. Chairman, this is obviously begging the question. The problem is determining the reasonableness of the existing figure and in adopting the existing figure and saying it is reasonable because it exists is not evidence. Mr. Davis stated he could not justify either an increase or decrease in this figure but he gave no reasons. Surely he would have a reason for one or the other. And that, I submit, Mr. Chairman, is the difficulty of adopting the historical approach to the question of value. Mr. Davis did not indicate that he has made any studies as to what the price would be if you take the competitive value to the market, less the cost of getting it there, or if he took any other

Argument by Mr. McDonald.

- 6936 -

principle and applied it. I am referring specifically to arriving at the 2 cents at the well. Now this is contrasted to the evidence of Mr. Hamilton. Mr. Hamilton made some calculations which he set out in WH-64. Mr. Zinder likewise submitted some calculations which can be used as guideposts. None have been submitted by Mr. Davis. I feel that he has volunteered his opinion without supporting it with facts on which the Board can base its own opinion. We are all aware of course that opinion is not evidence but I believe the Board must weigh the facts or arguments which support that opinion.

Now I think I should deal with Mr. Davis' evidence in some detail and I think the Board can take note of the following. At page 335 (Volume 5) Mr. Davis agrees that gas generally has a value at the well.

At page 354 (Volume 5) Mr. Davis emphasized the economic value of gas in the basement of a householder and he emphasized the conveniences even if the cost is high as compared with the cost of coal and he refers to the prices at Pittsburgh and admits the cost of gas at Calgary at present prices is very low. At page 5545 (Volume 68) Mr. Davis states that it is impractical to apply the utility approach to fixing the value of gas, and in so doing he agrees with others. Despite statements in Exhibit 148, and I presume it was his considered opinion, was that it would be ill-advised to use competitive fuel costs as a basis for fixing prices of gas. I find that on cross-examination in Volume 67, page 5455, he admits that coal is a competitive factor except in the case of domestic rates at Calgary.

At Volume 67, page 5442, he refers to coal being a competitive factor in Windsor. At page 5456,

Argument by Mr. McDonald.

- 6937 -

he refers to coal being a competitive factor in Birmingham. He sets out his view that coal is so much more expensive, having in mind the conveniences of gas in Calgary. And for domestic purposes it is not feasible for the Board to give it consideration. I mention that to stress the considered statement that the competitive factors should not be taken into mind.

Despite the fact he recommends a price of 2 cents at page 5547, Mr. Davis agrees that the producer can only expect to get what his gas can be sold for in the consuming market, less the cost of getting it there and that gives rise to competition with other fuels. At page 5571 Mr. Davis, as I mentioned earlier, admitted that he had not made any detailed calculations of the rate base of Madison and British American, the utility companies, in arriving at that.

At page 5582, Mr. Davis states that the competitive source of supply of gas, or another supply of gas, would set the limit of value, provide the value to the market, in the Calgary market, provided the supply was equal to the demand. I understand from these questions that the proposition put to him was this, that if another source of gas was obtained and actually piped into the Calgary market, that if that price of that gas, provided a sufficient supply was available, would set the limit at which the supply, the existing supply from Turner Valley could be sold. In other words that is applying the same principle which Mr. Zinder set out in his submission.

Now Mr. Hamilton was examined by Mr. Fenerty with regard to this point at page 4829 (Volume 61) and replying to Mr. Fenerty he stated that the cost approach

Argument by Mr. McDonald.

- 6938 -

to the value of gas at the well head was not practical but it should not be lost sight of; that it provides a ceiling beyond which the price should not be fixed from the point of view of fairness to the consumer. It should be used as a matter of control. In your question a few minutes ago, you referred to what was the value of the 11 cent price and I indicated before I was looking at your question from the point of view of the producer. Now Mr. Hamilton, met by the same question, looked at it from the point of view of the consumer and he sets out that if the price arrived at were say 11 cents, allowing for a fair rate of return, that that is a price which the consumer should not be asked to exceed. That is the ceiling.

At page 4830 you, yourself, Mr. Chairman, pointed out that in the cost approach with 200 wells it could very well be on that theory it would have to be carried back to 200 well head prices and that this was not practical.

Now at page 4857, Mr. Hamilton agrees that if the costs fixed by regulation are such that the Producer receives no benefit from the sale of gas marketed under regulation, the gas is in effect being confiscated.

(Go to page 6939)

Argument by Mr. McDonald.

- 6939 -

Mr. Hamilton states that as a minimum the producer must get more for the gas than the cost which is assessed against the producer. He had in mind, I presume repressuring and gathering costs.

At Page 4868, replying to yourself, Mr. Chairman, Mr. Hamilton listed the approaches to fixing the well head price as follows:-

- (1) By reference to the terminal price at Calgary, and the worked back to the wellhead.
- (2) Take the price of residue gas in relation to its repressuring costs, or in relation to some other costs that might fall upon the producer, that is to say, the producer should get more than such cost.
- (3) Treat the gas directly on a waste product basis and ascribe the purely nominal value to it, and,
- (4) adhere to the historical concept and continue the two cent price.

Now, Mr. Hamilton did not make a definite choice between any of the approaches which he mentioned, but at page 4883, Mr. Hamilton agreed that the comparative value to the consumer at the point of consumption, is something which should be considered in determining the well head value of the gas.

Mr. S. J. Davies, appearing for the City, was examined at Page 283, and he points out that anything that starts in the field, to sum up his evidence, I think it is simply this, that the price of gas which he charges or sets at the field at 2 cents and $7\frac{3}{4}$ cents at the

Argument by Mr. McDonald.

- 6940 -

outlet of the scrubbing plant should be maintained. His whole attitude or opinion is centred on the thought that any increase in the gas price will automatically result in a decreased gas consumption with increased costs, finally ending or resulting in a cost to the whole undertaking on the domestic market, which would be the last market to develop. In other words, Mr. Davies' evidence is that you should look for the sale price to the ultimate consumer, and if in dealing with that price there is results which means less consumption, then obviously increased costs remaining with the consumer will eventually destroy the market.

Now to summarize what I have said, and what I feel the evidence of all the witnesses means, I would say:

- (1) The utility or cost approach to the fixing of a value of the gas at the well head is not a practical application in this instance.
- (2) That the value of the gas at the well head should be determined in relation to its use to society, which in turn is measured in terms of its use as a fuel in relation to other fuels, and in terms of its use as a commodity, together with those other factors which lead many to consider natural gas a superior fuel in many respects, which adds to the value of natural gas over and above its competitive value on a strictly fuel basis.

And I submit also:

- (3) That any theory which presupposes that gas is a waste product of no value at the well head, or a product measured in value with relation to the

Argument by Mr. McDonald.

- 6941 -

costs of storing and handling gas in excess of market requirements, is contrary to any conception of value at all, and is directly contrary to the express purpose and intention of the Legislature in directing that a reasonable price be fixed, and is an argument disposed of by Dr. Katz when he pointed out, at Page 5721, and I quote:

" "I do not believe that one can say on the one hand that the gas is valuable to the extent that it should be conserved, and on the other hand say that it really does not have any value because all the value is spent in conserving it."

I rest my argument and my suggestion to the Board for guidance in this problem on the second principle which I summarized.

MR. CHAMBERS: Which one is that?

MR. McDONALD: That the value of the gas at the well head should be determined in relation to its use to society, which in turn is measured in terms of its use as a fuel in relation to other fuels, and in terms of its use as a commodity, together with those other factors which lead many to consider natural gas a superior fuel in many respects, which adds to the value of natural gas over and above its comparative value on a strictly fuel basis.

MR. CHAMBERS: Thank you.

THE CHAIRMAN: Have you, Mr. McDonald, arrived at any conclusion as to the relativity of coal and natural gas?

MR. McDONALD: I am going to deal with that under the part of "Competitive Fuels". It might be, Mr. Chairman,

Argument by Mr. McDonald.

- 6942 -

that I am unduly exhaustive in reference to this, but I feel that I should put on the record whatever I think is of value, which the Board might wish later to refer to.

THE CHAIRMAN: Do not feel under any restriction whatsoever, Mr. McDonald, as to what you should refer to or how long you take or how you present it.

MR. McDONALD: Thank you, Mr. Chairman.

Now following the principle, as outlined, it is the first requisite, I submit, as to finding out what is the relationship of the gas to other fuels, Then that brings me to what I will call "The Competitive Fuels Aspect."

(Go to page 6943)

• • •

Argument by Mr. McDonald.

- 6943 -

Now Mr. Zinder filed Exhibit 135 dealing with competitive prices or value of gas at Calgary and the elasticity of demand. His evidence is set out in Volume 63, at Page 4922, and he states at Page 4923, there he makes this statement:

"This report is supplemental to Submission No. 1 of the Producers' Committee of the Alberta Petroleum Association. In that submission it was stated that the value of natural gas at the burner tip places an upper limit on the value of natural gas at the well. In arriving at this maximum value of natural gas at the well, the costs of distribution, transmission, scrubbing, compression and gathering must be deducted from the value of the gas at the burner tip. These costs are part of the subject of inquiry in this proceeding and will thus only become determined and known at the conclusion of this proceeding.'

And I might say that it is my intention to carry these costs as outlined by Mr. Zinder through as I give them and make a definite submission but of necessity that will be later on in my argument:

'Even with such costs known, the determination of this upper limit of the value of natural gas at the well is not a simple matter. If the value of natural gas for domestic house heating is taken as an example this would give a certain value at the well. An entirely different value at the well would be obtained if the value to the large industrial consumer of natural gas for processing, heat treating, or other purpose is taken as a base. Furthermore, the value of gas service to an existing

[illegible]

Argument by Mr. McDonald.

- 6944 -

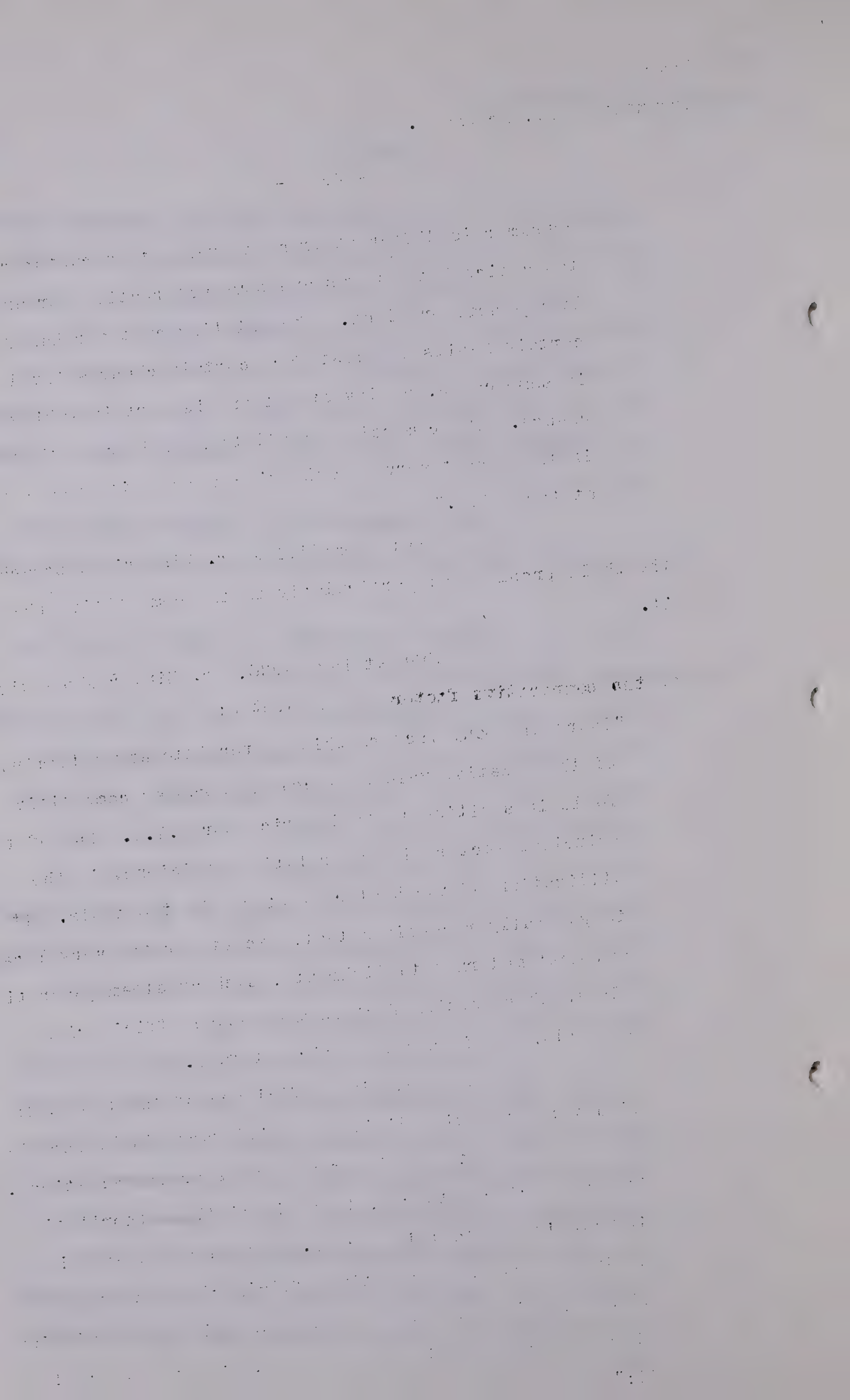
consumer is different from the value to a customer making the choice between gas and some alternative for an entirely new home or plant. The existing customer has formed certain habits and must face certain changes involving, in some cases, an investment on his part in making the change. The composite of all these values as they exist in the market served would give a composite value of gas at the wells."

That exemplifies Mr. Zinder's approach to the whole problem and particularly to the competitive phase of it.

Then at Page 4928, Mr. Zinder shows these as the comparative factor and he states:

"There are many factors which enter into any determination of the relative values of coal and gas as competitive fuels in addition to their price per B.T.U. One of the principal factors is the relative efficiency in the utilization of the heat content of the two fuels. It is generally recognized that, except for the very largest and most modern establishments, such as steam generating plants where design factors make equal efficiencies probable, gas is a more efficient fuel.

The relative efficiency of the two fuels will vary over wide limits and will vary widely for the same fuel as between different plants or installations. Under the circumstances, there is little authoritative information as to this factor. For purposes of this study the following relative efficiencies have been adopted, being the same as those used in the submission filed on behalf of the Gas Company, page 6 and Schedule II:"



Argument by Mr. McDonald.

- 6945 -

And then he goes on and deals with the matter of the efficiencies and he gives gas and coal efficiencies, which he used in his studies, domestic coal 55%, gas 70%; commercial and small industrial coal 65%, gas 75% and industrial coal 65% and gas 75%.

Then he goes on:

"Gas has many other advantages over coal which have a real value. It is necessary to store a substantial supply of coal on the premises. This necessitates storage space, requires an investment in the supply, and creates a fire hazard.

Gas, being delivered and paid for as it is used, incurs none of these costs. There is also the cost of handling the coal on the premises, the cost of ash disposal and the cost of attendance labor. All these factors would definitely be considered and accounted for in any comparative cost analysis for a particular installation. It is difficult to evaluate these factors, however, in a general comparison. No attempt is made to place any value upon them in this report.'

That is in the statement submitted:

'Coal and gas are compared on a straight cost per B.T.U. basis adjusted only for relative efficiencies of use. In viewing the results shown by this comparison it should constantly be recognized that gas has an added increment of value represented by the advantages and savings in costs which have not been evaluated."

Now I might say, Mr. Chairman, that at this stage I am not going to deal with the pros and cons of the relative efficiencies of coal and gas. I submit that on the

Argument by Mr. McDonald.

- 6946 -

evidence given and the cross examination thereon, that the guess which Mr. Zinder has made is as good as any other guess, and has the additional merit of being the same as that used by the Gas Company in its Exhibit 137.

Now it may have been a case of the blind leading the blind but I do believe that both the Gas Company Exhibit and that of Mr. Zinder, have reasonable efficiencies and ones which are for purposes of comparison at least reliable.

Now Mr. Zinder set out in his Exhibit 135 the competitive relationship of coal and gas in the three categories, domestic, commercial, small industrial and industrial uses, and he set up graphs from which could be read the different values of the gas and the different efficiencies, for the different values of coal.

(Go to Page 6947)

Argument by Mr. McDonald.

- 6947 -

Dealing however with the prices of coal as they were at the time the study was made and I think I can safely say as they are now, unless they are a little higher. With regard to domestic rate, Mr. Zinder, at Page 4930 (Vol.63) summarizes as follows:

"On an equivalent basis and under the relative efficiencies of 55% for coal and 70% for gas, Drumheller coal at \$8.30 per ton is equivalent to 53.6¢ per MCF, Blairmore coal at \$7.50 per ton is equivalent to 37.2¢ per MCF and Priddis coal at \$6.00 per ton is equivalent to 29.9¢ per MCF.

Thus, without allowing a value for the many other advantages of natural gas, its present price on a straight heating value basis for domestic use is well below competitive values. It may be considered that this is borne out by the fact that as early as 1937 when the price of natural gas in Calgary for domestic househeating was essentially 33 cents per MCF, approximately 87% of the company's domestic consumers used natural gas for heating."

And heating is referred to as house heating through furnaces.

Now summarizing Mr. Zinder's conclusions with regard to commercial and small industrial use which conclusions are set out at page 4931 (Volume 63):-

"Under rate No. 5 the commercial and small industrial customers pay essentially an average of 26 cents per MCF. On an equivalent basis using an efficiency for coal of 65% and of 75% for gas, Drumheller coal at \$6.00 per ton is equivalent to 35 cents per MCF, Blairmore coal at \$7.50 per ton is equivalent to 33.7 cents per MCF and Priddis coal at \$6.00 per ton is equivalent to 27.2 cents per MCF.

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

Argument by Mr. McDonald.

- 6948 -

Here again, as in the case of domestic use, and with no allowance for the many other advantages of natural gas, its present price is well below competitive values on a straight heating value basis. Again, it may be considered that this conclusion is borne out by the fact that as early as 1937 when the price of natural gas in Calgary for such use was essentially 33 cents per MCF approximately 87% of all commercial customers served used gas for heating purposes."

With respect to industrial use at Page 4932 (Volume 63) his conclusion is:-

"On an equivalent basis using an efficiency of 65% for coal and 75% for gas, Drumheller coal at \$4.00 per ton is equivalent to 23.4 cents per MCF, Priddis coal at \$6.00 per ton is equivalent to 27.2 cents per MCF and Blairmore coal at \$7.50 per ton is equivalent to 33.7 cents per MCF. Without taking into account the many other advantages of gas, the price of gas for the larger commercial and industrial users is well below competitive levels except for consumptions close to the minimum under Rate No. 4. At 600 MCF per month, the average rate for gas is 26 cents per MCF, whereas Drumheller coal at \$4.00 per ton is equivalent to 23.4 cents per MCF. As the monthly use increases, however, the average gas rate decreases, as shown above, to as low as 17.4 cents for 5,000 MCF per month. At this rate and under the relative efficiencies used Drumheller coal would have to sell for approximately \$2.98 per ton."

In that latter statement Mr. Zinder refers to one of the results of the Rate No. 4, which shows that if

• • • • •

100

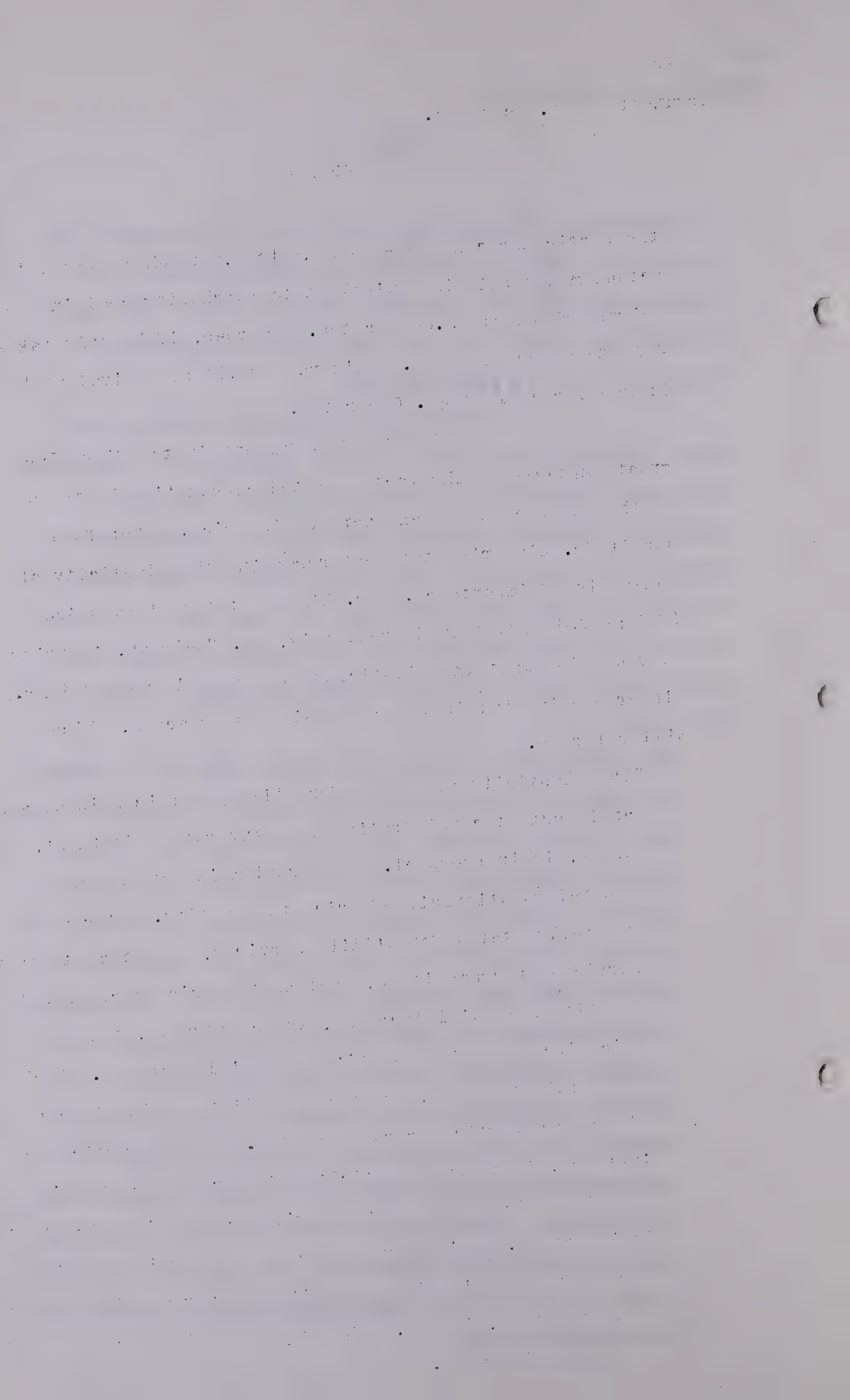
Argument by Mr. McDonald.

- 6949 -

the particular consumers uses up to 5,000 MCF a month, the actual money paid is equivalent to purchasing coal in the neighbourhood of \$3.00 per ton. Whereas, if he only takes 600 MCF under Rate No. 4 his rate would be equivalent to Drumheller coal at \$4.00 per ton.

Now the Gas Company in the City place great emphasis on the fact of total consumption by the users of the gas because of an increase in price. Therefore I submit Mr. Zinder's statement regarding the elasticity of demand is of importance. Mr. Zinder states at Page 4937 (Volume 63) and I shall read this, Mr. Chairman, to bring to your mind what the elasticity of demand is and what Mr. Zinder has in mind in the conclusion he reaches, which I will refer to.

"The elasticity of demand for utility services is always an important consideration when any rate adjustment, down or up, is in prospect. The problem is not one of the general relationship of price to quantity. It can be generally stated for utility services, as for most other services or commodities, that as the price decreases the quantity sold will increase, and conversely, that as the price increases the quantity sold will decrease. Such a general statement, however, has little value in considering a particular rate problem. In any particular instance, it is the elasticity of degree of change in quantity which results from a given change in price that is important. This degree of change determines whether total revenues will increase with an increase in rate or to what extent, if any, total revenues will decrease with a decrease in rates.



Argument by Mr. McDonald.

- 6950 -

It is conceivable that the price of a given product may already be so low and the market already so saturated that any further reduction in price will bring very little change in the demand. Any change in price, when a company is operating at this point on the demand curve will cause almost a proportional change in total revenues. In an unsaturated market it is possible for a price reduction to cause an increase in volume so substantial as to result in an increase, rather than a decrease, in total revenue.

The measurement of the demand elasticity of any service is difficult, if not impossible. Many factors enter into such a determination in addition to the price and availability of alternative substitutes. It would be misleading, for example, to take the composite sales of any utility service as a basis for measurement or even as a guide. Such service is composed of a number of diverse classes of customers, each having a separate demand curve. "

Now Mr. Zinder deals with each of the classes of service and I will cite his conclusions as he gives them. He deals with the domestic class at Page 4942, (Volume 63). In Part 1 of this submission it was shown that the present price for gas for domestic heating was well below the competitive level as measured by coal as a substitute. All the factors clearly indicate that it would take a very substantial increase in the price of gas to this class of customer to affect the use to any material extent. So that an increase in price could be expected to produce an increase in revenue. That is the case here. That an increase in the

| Trial | Control (n = 10) | MCI (n = 10) | AD (n = 10) |
|-------|------------------|--------------|-------------|
| 1 | 85 | 75 | 65 |
| 2 | 85 | 75 | 65 |
| 3 | 85 | 70 | 60 |
| 4 | 85 | 65 | 55 |
| 5 | 85 | 60 | 50 |

Argument by Mr. McDonald.

- 6951 -

domestic rates will result, in Mr. Zinder's opinion, in an almost directly proportionate increase in the revenue.

On the commercial side Mr. Zinder states the commercial classification of customers was probably a heterogeneous group.

"The commercial classification of customers is probably a heterogeneous group, since in many cases it includes small industrial users. The demand behaviour of gas for restaurants, hotels, laundries, and such establishments will differ from its use in heating of stores, office and apartment buildings. In the first group the principal factor influencing use once gas is adopted as the fuel, is the volume of business carried on by the establishment. In the second group the principal factor influencing demand is the degree day deficiency. In both groups, once the price of gas is fixed below competitive levels of alternatives, price becomes a secondary factor in influencing use. In Part I of this Submission it was shown that for this class of service present prices of gas in Calgary are sufficiently below competitive levels so that it would require a substantial change in price to cause any material change in use."

And I suggest there, sir, that if there is an increase in price that the increase in revenue to the Gas Company will be directly or almost wholly directly proportional. There will be no actual loss of consumption.

Dealing with the industrial user at Page 4945, Mr. Zinder concludes:

"In the fuel use of natural gas by industrial customers will probably be found the most sensitive relationship of any group of gas customers to the cost of competitive

1. The first part of the document is a list of names.

2. The second part of the document is a list of names.

3. The third part of the document is a list of names.

4. The fourth part of the document is a list of names.

5. The fifth part of the document is a list of names.

6. The sixth part of the document is a list of names.

7. The seventh part of the document is a list of names.

8. The eighth part of the document is a list of names.

9. The ninth part of the document is a list of names.

10. The tenth part of the document is a list of names.

11. The eleventh part of the document is a list of names.

12. The twelfth part of the document is a list of names.

13. The thirteenth part of the document is a list of names.

14. The fourteenth part of the document is a list of names.

15. The fifteenth part of the document is a list of names.

16. The sixteenth part of the document is a list of names.

17. The seventeenth part of the document is a list of names.

18. The eighteenth part of the document is a list of names.

19. The nineteenth part of the document is a list of names.

20. The twentieth part of the document is a list of names.

21. The twenty-first part of the document is a list of names.

22. The twenty-second part of the document is a list of names.

23. The twenty-third part of the document is a list of names.

24. The twenty-fourth part of the document is a list of names.

25. The twenty-fifth part of the document is a list of names.

26. The twenty-sixth part of the document is a list of names.

27. The twenty-seventh part of the document is a list of names.

28. The twenty-eighth part of the document is a list of names.

29. The twenty-ninth part of the document is a list of names.

30. The thirtieth part of the document is a list of names.

31. The thirty-first part of the document is a list of names.

32. The thirty-second part of the document is a list of names.

33. The thirty-third part of the document is a list of names.

Argument by Mr. McDonald.

- 6952 -

fuels. Some companies after establishing a base price for service to such customers provide for either an increase or decrease in this price, depending upon increases or decreases in the prevailing prices of competitive fuels in the area. Reference to Chart No. 3 of Submission No. 1, indicates that except for average monthly use, around 600 to 800 MCF per month, the price of gas in Calgary for industrial use is below competitive levels. This is particularly true with respect to the larger monthly volumes. This would indicate that for the smaller monthly consumption, no price change could be made increasing the price of gas without influencing the total volume of sales, whereas for the larger volume there is a margin between the price of gas and competitive levels."

I take that to mean, Mr. Chairman, that in this industrial classification an increase in price may be reflected in a decrease in consumption which would affect the total revenue so that there may not be a proportional increase in the total revenues of the company.

And that reaches a point, Mr. Chairman, where I can nicely stop.

(At this time the Hearing was adjourned until 10 o'clock A.M. Friday morning, June 14th, 1946)

Presented by Mr. McDonald.

- 6932 -

... some companies after establishing a base price
for services to which customers provide for either an
increase or decrease in this price, depending upon
the increase or decrease in the prevailing prices of
competitive fuels in the area. Reference to their
3 of September No. 1, indicates that except for average
monthly use, around 400 to 500 MCF per month, the price
of gas is fairly for industrial use is below competitive
levels. This is particularly true with respect to the
higher monthly volumes. This would indicate that for
the smaller monthly consumption, no price change would
be made increasing the price of gas without reflecting
the total volume of sales, whereas for the larger volume
there is a margin between the price of gas and competitive
levels.

I take that to mean, Mr. Chairman, that in
this industrial consumption on increases in price may be
reflected in a decrease in consumption which would affect the
total revenue so that there may not be a proportional increase
in the total revenue of the company.

And that increases in price, Mr. Chairman,
where I can nicely stop.

(At this time the hearing was adjourned until 10 o'clock A.M.
Friday morning, June 15th, 1946)

